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THE FORAGE RESOURCE. VOLUME 3. CHAPTERS IV AND V: ANALYSES-ALTERNATIVES

Public Land Law Review Commission
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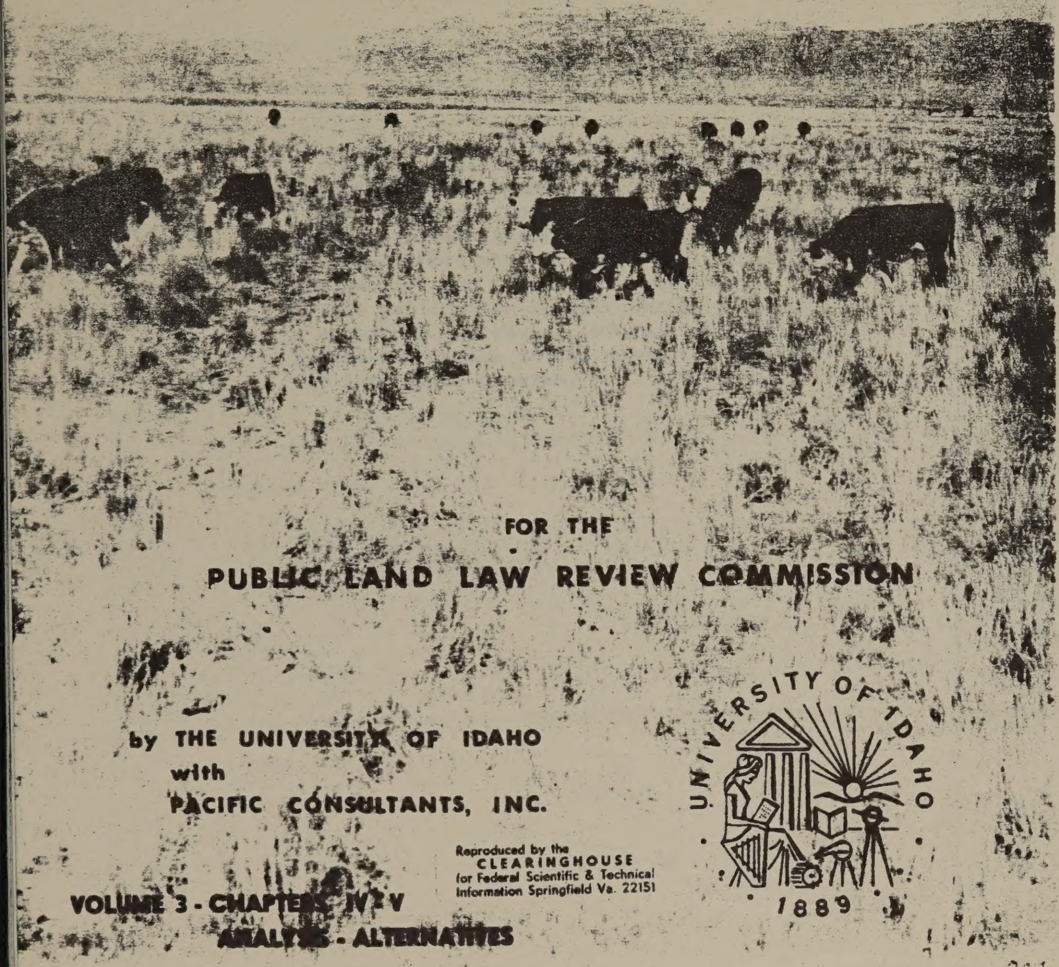
THE FORAGE RESOURCE



FOR THE

PUBLIC LAND LAW REVIEW COMMISSION

by THE UNIVERSITY OF IDAHO
with
PACIFIC CONSULTANTS, INC.

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THE FORAGE RESOURCE

A STUDY FOR THE
PUBLIC LAND LAW REVIEW COMMISSION

VOLUME 3

Chapter IV Analysis
V Alternatives

UNIVERSITY OF IDAHO
Moscow, Idaho

PACIFIC CONSULTANTS, INC.
Moscow, Idaho

June 1969
(Revised January 1970)

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GLOSSARY OF TERMS*

ADJUDICATION. The apportionment of grazing use on public range among eligible applicants.

ADJUSTMENTS. Changes in animal numbers, seasons of use, kinds or classes of animals, or management practices as warranted by specific conditions.

ALLOTMENT. An area designated for the use of a prescribed number of cattle or sheep, or by common use of both under one plan of management.

ALLOTMENT MANAGEMENT PLAN. A written action program designed cooperatively by the livestock operator and the Government to reach specific management goals of both parties. Components of the AMP are: (1) statement of forage resources, (2) objectives of livestock management, (3) grazing management system, (4) proposed range improvement practices, and evaluation effectiveness of grazing system.

ANIMAL MONTH. A month's tenure upon range by one animal.

ANIMAL UNIT. A standardized unit of measurement for range livestock which is equivalent to one cow or five sheep or five goats, all over six months of age.

ANIMAL UNIT MONTH. The amount of feed or forage required by an animal unit for one month. Not synonymous with animal month. Abbr., AUM.

ANNUAL LICENSE OR PERMIT. A document which limits the total authorized grazing period to one year or less. It may or may not be subject to renewal.

BASE PROPERTY. See "commensurate property."

CLASS I PROPERTY. Land dependent by use, or full-time prior water.

CLASS II PROPERTY. Land dependent by location, or full-time water.

COMMENSURABILITY. Capacity of a permittee's base ranch property to support permitted livestock during the period such livestock are off public land.

COMMENSURATE PROPERTY. Land or controlled livestock water which qualifies a person for a grazing preference on other land, either public or private. Syn., "base property."

COMMON USE. The use of range by more than one kind of animal either at the same time or at different times within the same growing season.

COMMUNITY ALLOTMENT. An allotment upon which several permittees graze in common.

COW-CALF OPERATIONS. Breeding cows are kept and comprise most of the herd. In its extreme form, weaned calves at about six to eight months of age are sold, only enough heifer calves being retained to replace death loss of mature cows. The emphasis is on the production of growing animals, not upon readying them for market.

DEPENDENT PROPERTY. See "commensurate property."

ELEVEN WESTERN STATES. Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon and California.

FORAGE. (N) All browse and herbaceous food that is available to livestock or game animals. It may either be used for grazing or harvested for feeding. (V) Act of consuming forage.

FORB. Broad leafed herbaceous plant.

GRASS AND GRASSLIKE. Narrow leafed herbaceous plants of the grass and selge families.

GRAZING. Consumption of range or artificial pasture forage by animals.

GRAZING DISTRICT. An administrative unit of federal range established by the Secretary of the Interior under the Taylor Grazing Act of 1934, as amended.

HERB. A non-woody plant, at least above the ground.

HERBACEOUS. Of the texture of a herb; not woody.

LIVESTOCK FARM. Farms that raise cattle (non-dairy), calves, hogs, sheep, goats, wool, and mohair that do not qualify as livestock ranches.

LIVESTOCK RANCHES. Ranches in which the sales of livestock, wool, and mohair represent 50 percent or more of the total value of farm products sold and in which the pastureland or grazing land amounts to 100 or more acres and is ten or more times the acreage of cropland harvested.

MULTIPLE USE. The management of all the various renewable surface resources of the public lands so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

NON-USE. Lack of the exercise, temporarily, of a grazing privilege on grazing lands. Also, an authorization to refrain, temporarily, from placing livestock on public ranges without loss of preference for future consideration.

PARALLEL LANDS. Uncultivated lands which produce the same general types of forage and which are physically similar to the surrounding federal range. Generally grazed at the same time as the federal range.

PRIOR USE. Grazing use preceding a specified time. General reference is to 5-year period immediately preceding June 28, 1934.

PRIVILEGE. A particular and peculiar benefit or advantage enjoyed by a person, company, or class, beyond the common advantages of other citizens. General reference is to privilege to graze on public lands which may be created by permit, license, lease or agreement.

RANGE. All land producing native forage for animal consumption, and lands that are revegetated naturally or artificially to provide a forage cover that is managed like native vegetation.

RANGE IMPROVEMENT PRACTICE. Artificial seeding, fencing, fertilizing, control of undesirable plants, construction of water spreaders, stock water developments, flood control devices. Also, used to mean management changes of grazing use both in period of use and numbers of use, more common change is reduction in numbers of use.

STEER OR STOCKER RANCHES. Growing cattle are purchased from another rancher, grazed for at least one season and possibly longer, and sold. Though called steer ranches because steers are the most common class of cattle bought, heifers and even mature cows are often included. No breeding herd is kept.

TEMPORARY LICENSE OR PERMIT. A document authorizing grazing a certain number of animals on public lands during an emergency or for a certain period, terminable at the end of such period.

TERM PERMIT. A document authorizing grazing a certain number of animals on public land for a specific term up to 10 years in the U.S. Forest Service and Bureau of Land Management.

WATERSHED. A drainage area.

* Source: "A Glossary of Terms Used in Range Management," American Society of Range Management; M. Clawson, Western Range Livestock Industry (1950); Public Land Statistics, 1967.

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SECTION A

OBJECTIVES OF PUBLIC LAND POLICY AND THEIR SIGNIFICANCE FOR FORAGE PRODUCTION

Introduction

Although forage production and use has always been a leading function of public lands, it has not always been the primary objective of public land management. To evaluate the existing public land laws and their administration, it will be necessary, first, to analyze the policy objectives of public land agencies and, second, to ascertain the effects of these objectives upon the production and use of forage on the public domain.

Policy goals and objectives are usually easier to state than to attain. Frequently the objective is ill-defined in the statute, or is defined in such a manner as to mean different things to different people. Terms such as "conservation," "fair value," "stability of the range industry," or "fairness to prior users" are general terms not easily translated into operational practices. In order to make such objectives operational, the administrative agencies must give these terms specific meaning. In some cases administrative definitions may depart considerably from the concepts originally intended by Congress. In other cases, policy objectives may not be practicable no matter how specifically defined. They may encounter so much local opposition, for example, that enforcement is not practicable. Finally, all objectives are not complementary at all levels of attainment; rather, as more of one objective is secured, a constraint is placed upon the attainment of other objectives. When several objectives are to be secured by an administrative agency, therefore, there always occurs a point beyond which the attainment of one objective becomes competitive with other objectives. As a consequence, the agency is often placed in a position in which it must decide upon the priority of objectives. In doing so, conflicts of interest arise among users and the agency may be charged with mismanagement of the public lands.

Not only are conflicts among stated objectives encountered in the administration of public lands, but policy objectives are sometimes advanced by the administrative agencies without a clear definition for doing so in the acts themselves. Such modifications in objectives frequently provide the flexibility in administration of public lands necessary to meet changing needs of society. Other requirements of society which have not been embraced either by legislation or by administrative interpretation press for recognition. Such emerging objectives or issues frequently arise out of the changing wants and needs of society. The original objectives may no longer be essential and new welfare issues may have become paramount.

If land laws and public land administration are to be relevant to public welfare, they must be analyzed in such a manner that their pertinence to welfare issues is clearly exposed and their effects understood. Only in this manner can the irrelevant issues be deemphasized and the emerging issue become recognized or strengthened through new legislation.

In the analyses which follow, in other sections of this chapter, the goals and objectives of public land policy will be analyzed only as they affect the production and use of forage. They will concern themselves only with such objectives as relate to preservation, maintenance, development, allocation, and financing of grazing lands; to those objectives which inhibit or restrict full utilization of public welfare as it relates to the range livestock industry. It will not be the purpose of this report to evaluate policy objectives as they relate to other uses of public lands or to suggest what priorities should be placed upon them. This will be the task of other specific public land studies.

In developing these analyses, considerable thought has been given to semantics and style of writing. Unlike most studies of this nature, the concerned readers will cover an unusually broad spectrum of interests. Advice has been given that all groups with any concern for public land will be represented by the most sophisticated of economists, range managers, ecologists, animal scientists, and the like. Advice has also been offered that the largest readership would be by the many, but less sophisticated, members of the several groups that these specialists represent. A final admonition was proffered that, because there were so many conflicting users interested in the land for their own particular wants, whatever developed from the study would be a fair target for deliberate misunderstanding.

It is the belief of the Forage Study Team that the large number of readers with diverse interests need to understand all elements of the study. Therefore, wherever possible, the specialized languages of the sophisticated economists and scientists have been passed over for a more common understanding. Except for the multiple correlation analysis covered separately in some detail in Chapter III, Section C, all economic concepts referred to are quite elementary. In spite of their elementary nature, fairly complete developments of each concept have been presented; but not so complete that every variation or technical nuance has been covered. For the most part, this study deals with basic items. A good understanding of these basics needs to be had by all interested in public land. Having no preconceived biases of their own other than that the facts should be presented fairly and completely, the Study Team's task became one more of how to make the uninitiated understand rather than how to keep the initiated from misunderstanding. This was simplified further by the Team's not having to make recommendations. When presenting facts and pointing out the effects of actions and reactions, it is impossible at times to keep from drawing conclusions. Hopefully, the reader will understand that when conclusions are necessary, they are presented without recommendation. That task belongs to the Public Land Law Review Commission which must weigh all facets of all studies and propose whatever wisdom is necessary for the final judgments of Congress.

The readers of this report should know also that in some instances this chapter is deliberately repetitious and even somewhat wordy. This has been done in the belief that for the average reader it will give a better understanding if each section is more or less self-contained within itself so that necessary reference to data in other parts of the report can be held to a minimum. If this violates the sensitivities of some colleagues, their pardon is requested.

Before beginning the analyses of the several goals and objectives of public land policy as they relate to forage, a brief historical resume of the major objectives will help prepare the framework within which the analyses are made.

Maintenance, Development and Preservation of Public Forage Lands

Resource conservation is a policy goal of all public land agencies. As early as the 1870's, Dr. B. E. Fernow, Dean of the Faculty of Forestry of the University of Toronto, was advocating conservation measures for the United States. (1) The conservation movement was largely instrumental in securing the passage of Section 24 of the Act of 1891. This Act provided for the creation of forest reserves and led to the Act of 1897 establishing an administrative organization to manage the reserves. (2)

When the U.S. Forest Service was established in 1905, Secretary Wilson of the Department of Agriculture addressed to Gifford Pinchot, Chief of the U.S. Forest Service, a letter which said in part:

> "You will see to it that the water, wood, and forage of the reserves are conserved and wisely used ...; and where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good of the greatest number in the long run." 1/

The objectives of the Taylor Grazing Act were expressed in the title to the Act as follows:

(1) to stop injury to the public grazing lands by preventing overgrazing,
(2) to provide for their orderly use, improvement and development,
(3) to stabilize the livestock industry dependent upon the public range.

From the inception, then, of the public land agencies as they exist today, the goal has been conservation and use, with maintenance and development for the greatest good. The formal addition of the multiple use concept with the U.S. Forest Service 2/ and with the Bureau of Land Management 3/ did not change this concept except that it emphasized the "other uses" to assure that all use considerations had the policy blessing of the Congress.

The grazing use and maintenance regulations of all federal land agencies are expressed in considerable detail in the Legal Chapter of this report. They are stated briefly below once more for the quick review of those reading this Analysis Chapter.

1/ Samuel T. Dana, Forest and Range Policy, pp. 142, 143.
2/ Multiple Use and Sustained Yield Act of 1960, 16 U.S.C. 528 (1964).
3/ Classification and Multiple Use Act of September 19, 1964; 43 U.S.C. § 1411 (Supp. 1967).

United States Forest Service

The stated grazing policy for all U.S. Forest Service administered lands is as follows:

a. Make U.S. Forest Service administered lands suitable for livestock grazing available for use by qualified livestock operators.

b. Develop the range resources to their reasonably attainable potential, and manage them on a sustained yield basis in harmony with other uses and resource values.

c. Provide reasonable tenure of grazing use thus lending stability to the local communities and to the established ranching operations.

d. Protect the established family farms and ranches against unfair competition in using U.S. Forest Service administered range.

e. Correlate the use of U.S. Forest Service administered range with the use of dependent private lands.

Additional policy on the National Grasslands is stated as follows:

a. Integrate rangelands of all ownerships into logical land management units administered where possible through organizations of local grazing users. These cooperatives will be encouraged to obtain control of all lands within their boundaries needed for sound land programs in accord with the Bankhead-Jones Farm Tenant Act.

b. Demonstrate range management and livestock use in association with other multiple uses on mixed ownership land management units. 4/

The U.S. Forest Service administrative instructions covering range improvements are contained in the U.S. Forest Service Manual, Title 2200 -- Range Improvement.

Range improvements are made with the objective to improve "lands administered by the U.S. Forest Service to provide the optimum sustained livestock use consistent with other resource uses, activities, and values." 5/ A further objective is to "contribute to community stability, and to extend good conservation practices to associated public and privately owned range land." 6/

4/ Forest Service Manual § 2203.
5/ Ibid. § 2240.2
6/ Ibid.

No criteria are established by either statute or regulation for user-government participation in range improvements. The range manual indicates by inference that the Government should have the first responsibility to make improvements to the extent of available funds. Where government funds are not available, permittee's cooperation is accepted -- then only for improvements in which he will receive returns to his operation. 7/ The manual provides few other guidelines as to user-government participation in improvements. Range improvements which are "primarily for the convenience of the users" will be constructed by the permittees. 8/ Statements in the Regional Manuals confirm the indefinite policy regarding cooperation, i.e. Section 2241.4, Region 3 Supplement, provides that conditions "vary so much that a specific guide for cooperative construction of improvements cannot be established." 9/

Investment in range improvements by the permittee does not obligate the Government to reimburse the permittee for such investment if the grazing use is reduced or discontinued. 10/ Regulations permit title to structural improvements, that are removable without damage to the resources, to remain with the permittee or cooperator. However, title must remain with the Government if the Government participated in the cost. Also, title to non-structural and non-removable structural improvements remains with the Government. 11/

The Granger-Thye Act of March 3, 1925, provides in part that:

> "Of the moneys received from grazing fees by the Treasury from each national forest during each fiscal year there shall be available at the end thereof when appropriated by Congress an amount equivalent to two cents per animal-month for sheep and goats and ten cents per animal-month for other kinds of livestock under permit on such national forest during the calendar year in which the fiscal year begins, which appropriated amount shall be available ..." for various improvements stipulated.

Bureau of Land Management

As stated above, Congress has outlined a policy for the Bureau of Land Management of conservation, protection, and development of the public lands. "The lands are to be used in harmony with their potentials, and the productive capability of the renewable resources preserved. Grazing district administration is directed toward obtaining the optimum sustained yield of forage for use by livestock and wildlife in balance with a multiple use program designed to enhance and perpetuate range resources and to facilitate maximum economic use consistent with long-term conservation objectives. Range resources include forage, soil, watershed, recreational and aesthetic values, and wildlife habitat." 12/

In recent years the Bureau has devised a grazing management plan that gives more flexibility to the range management program. They call this their Allotment Management Plan (AMP). This plan is a written program based on the best information available, that considers all multiple activities, and that is agreed to cooperatively by both the rancher and the Bureau. In describing the goals and organizational details of the AMP, the director of the Bureau of Land Management had this to say:

> "The long-term goal of the Bureau's range program is to obtain livestock grazing management of public lands where grazing is importantly involved and where retention for multiple use management can reasonably be expected. Allotment management plans will not be required on isolated or fragmented areas with limited multiple use values. Livestock forage production objectives, as well as other multiple use goals, can be accomplished through scientific management of livestock grazing. The harvest of forage by livestock is a key management tool in developing or maintaining good range condition.
>
> "We believe that improved grazing systems are the basic means by which we can stabilize the dependent livestock industry and provide a sustained yield of forage in balance with other resource uses and needs. The selective grazing habits of livestock are a principal cause of declining range condition. Continual reduction of livestock numbers is not a satisfactory solution. By reducing livestock numbers, the total area substantially grazed is reduced, but the effects of continuous grazing during the growing season remains on the area that is utilized. Improper and over-utilization continues on certain areas of an allotment even though livestock numbers are greatly reduced. Grazing livestock under a specifically adapted grazing system improves range conditions, which is a primary Bureau objective, and provides a sound base for continued livestock use of the public lands. 13/

Unlike the U.S. Forest Service, which is not faced with the problem of potential land disposal, the Bureau of Land Management has had

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7/ Forest Service Manual § 2240.3-2.
8/ Ibid. § 2240.3-4.
9/ Ibid. § 2241.32.
10/ Ibid. § 2240.3-7.
11/ 33 Fed. Reg. 4801 (1968); 36 C.F.R. § 231.9, as amended.

12/ Bureau of Land Management Manual § 4110.02-B.

13/ Letter by Boyd Rasmussen, Director, Bureau of Land Management, to Dean Ernest Wohletz, University of Idaho, dated September 17, 1968.

statutory responsibility for cooperating with permittees in improving the land. Also, by regulation they have been responsible for seeing that the permittees received some compensation whenever possible for their residual investments when they were deprived of them. Section 4 of the Taylor Grazing Act authorizes permittees construction of reservoirs, fences, and other improvements. A statute early in the life of the Taylor Grazing Act 14/ provided that no permit will be issued which will entitle a permittee to the use of improvements "constructed which owned by a prior occupant until the applicant has paid to such prior occupant the reasonable value of such improvements ..." Also, "early in the administration of the Taylor Grazing Act, regulations were approved by the Secretary of the Interior which provided that in the event the public land, either in grazing districts or Section 15 leases, is appropriated under the public land laws by another individual the appropriator will be required to compensate the stockman permittee, or lessee for his interest in the improvement situated on the appropriated land at its current value." 15/

The current regulations have modified the wording of the earlier version to the extent that "when the disposal application covers land upon which (permanent) range improvements have been placed ... the land applicant may be required to agree in writing to compensate the licensee, permittee, or other owner. ..." 16/ Regulation also provides that when there is an application for withdrawal by another agency, the withdrawal is conditional upon the payment by the applicant agency of fair and reasonable compensation "for the loss of the improvements." 17/ The regulations go on to say, however, "providing that the applicant agency is authorized by law to make such compensation."

It is understood that the provision above has not been utilized very often. This has not necessarily been due to the fact that the Bureau of Land Management has not been sympathetic to permittees being assured that they will be paid for their residual values of improvements. To the contrary, in 1961, and again in 1963, the Secretary of the Interior asked Congress to enact a bill which would give permittees the same protection for these residual values of improvement as a 1942 statute gave for all values whenever use for war or national defense purposes of the public domain caused permittees to lose the land for grazing and to suffer losses. 18/ This proposed protection applied "when any department or agency of the Federal Government shall acquire the use, other than for war or national defense purposes, of public land or acquired land under the jurisdiction of the Secretary of the Interior. ..." However, this bill was set aside in 1961. After the 1963 submittal the whole subject was postponed until the Public Land Law Review Commission could have an opportunity to study all aspects of grazing lands.

The Taylor Grazing Act also was quite specific in how portions of the collected grazing fees were to be used for range improvements. In one place it provided that 25 percent of the money collected under Section 15 of the Act shall be made available for range improvements; however, by regulation 33 percent of the total fee collected under Section 3 of the Act is allocated for range improvements.

Agencies other than the U.S. Forest Service and the Bureau of Land Management which are involved in public land management permit grazing only as an adjunct to their other activities. Nevertheless, they all recognize the conservation objective.

The Bureau of Sport Fisheries and Wildlife 19/ permits grazing on about 2 million acres of its land. Uses other than for wildlife are subordinate. All grazing permits, with few exceptions, are limited to cattle. Before any permits are issued, a soil survey is made and the agency determines that all resources such as water, fencing, etc. are available for proper management. Seasons of use are selected to prevent competition of cattle grazing with wildlife use. When improvements are required, the construction "will be the responsibility of the Bureau, except that the permittee may be allowed to provide for his use temporary facilities such as surface pipelines, partition fences, removable water tanks, removable windmills or other temporary facilities." In "special cases" permission may be granted for construction of permanent facilities. In these instances the permittee's contribution "should be limited to furnishing labor only, but any fixed property so constructed will become the property of the Government."

The Bureau of Reclamation 20/ acquires lands which it plans to bring under reclamation. In many cases these lands are acquired in advance of actual project construction. Much of the excess land acquired by the Bureau of Reclamation has been turned over to the Bureau of Land Management for administration, in which case it is administered as other Bureau of Land Management lands. The actual grazing land administered by the Bureau is so small that few of the complex administrative problems arise. However, in all leasing arrangements, good

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14/ 43 U.S.C. § 315c, 1934.
15/ Letter dated Sept. 13, 1961, from the Secretary of the Interior to Speaker of the House transmitting draft of proposed bill "To compensate range users for range improvements where land is taken to be devoted to federal non-military use."
16/ 43 C.F.R. § 4115.2-5 (a)(7)(i)
17/ 43 C.F.R. § 2311.2

18/ Act of July 1, 1942, 56 Stat. 654; 43 U.S.C. § 315q, as amended.
19/ See Legal Chapter II, Section A, beginning on p. II-60.
20/ See Legal Chapter II, Section A, beginning on p. II-78.

conservation practices are insisted upon. This Bureau does not have general authority for compensation for residual value of any improvements which the lessees may have left.

The National Park Service does not consider grazing as compatible with the use of parks and monuments. 21/ Nevertheless, some grazing does take place. Care is taken, however, to make sure that grazing does not spoil the scenic beauty or in any other way mar the land for recreational and scenic use. Most parks and national monuments do not make provision for the permittees making investments for improvements. Two exceptions are the Grand Teton National Park and the Dinosaur National Monument. For these two, specific regulations spell out that the lessees are to "erect no building or other structure without first obtaining the prior approval of the National Park Service." Also, "the lessee may sell to a successor or remove all improvements made by him within thirty days of terminations of such permit or lease, otherwise the improvements become the property of the United States."

The Department of Defense 22/ permits private use of its land that it has acquired which is in excess of its present needs, or which can be devoted to other uses without impairing its essential use, that of the national defense. All of this land is classified to determine its highest use. Where lands are best served by grazing, efficiently sized grazing units are laid out, and land use regulations are prepared for each unit. These land use regulations specify conservation requirements and other improvements to provide for sustained yield grazing and for the improvement of the land for grazing. The regulations also include limitations on grazing and on the months of use. A typical lease provision in Department of Navy grazing leases for improvement to assist in good grazing management is as follows:

> "Installation of Structures and Removal - Title in Lessee. The lessee, at his own expense with the prior written approval of the Government, may erect temporary structures as are necessary or incidental to his use of the premises. Title to such structures shall remain in the lessee who shall have the duty to remove them without damage to the premises upon the termination of the lease. Should the Government terminate the lease, then lessee shall have 30 days from the receipt of notice of termination of the lease to remove such structures. Upon failure to so remove the structures, title thereto shall thereupon vest in the Government."

21/ See Legal Chapter II, Section A, beginning on p. II-89.
22/ See Legal Chapter II, Section C, beginning on p. II-153.

The Atomic Energy Commission 23/ has no statutory, regulatory, or administrative procedures which authorize it to administer grazing on the public grazing lands. However, the Atomic Energy Commission has an agreement with the Bureau of Land Management to manage some grazing lands for it, generally in accordance with the Bureau regulations. Also, in some instances the Army Corps of Engineers manage some lands for the Commission.

23/ See Legal Chapter II, Section C, beginning on p. II-178.

Reference Material

Chapter IV - Section A
Maintenance, Development and Preservation of Public Forage Lands

1. Ely, R.T., R.H. Hess, C.K. Leith, and T.N. Carver. The Foundations of National Prosperity. pp. 18-24.

2. 43 U.S.C. § 315c, 1934.

Allocative Justice and Fairness

As was stated briefly in the legal chapter covering the U.S. Forest Service 1/ and the Bureau of Land Management 2/, the first grazing regulations to be applied to the western range grew out of the range wars with their accompanying spoilation during the latter years of the last century. The first agency to apply such regulations was the U.S. Forest Service. The very young Bureau of Forestry has undertaken the study for an orderly system of range use on the Forest Reserves. In 1905, when control over the Forest Reserves was transferred from the Department of the Interior to the Department of Agriculture, the new U.S. Forest Service agency adopted the new regulations which became effective July 1, 1905. Grazing fees were instituted on January 1, 1906.

One of the first necessities in setting up a system of regulations for grazing the Forest Reserves was that of devising a fair means for allocating grazing permits. In matters of this nature, Government has two different ways in which to view the land it administers. The first manner is as that of a landlord administering the land for public gain. As a landlord, the Government should optimize its income through its agencies in such a fashion as to secure the largest possible monetary returns. The second way is as that of a custodian. To the Government as custodian, income optimization is secondary to the attainment of other objectives, social as well as economic. Following the general philosophy of the time, the U.S. Forest Service purposely chose its first regulatory role as that of a custodian rather than as a landlord.

The criteria employed by the U.S. Forest Service in its initial allocative policies were summed up in a letter by President Theodore Roosevelt to Secretary of Agriculture James Wilson in 1905. The letter read:

> "In granting grazing permits you give preference first to the small nearby owners; after that, to all regular occupants of the Reserve range; and finally to the owners of transient stock.
>
> "This is exactly as it should be. The small nearby owners are the homesteaders, the men who are making homes for themselves by the labor on the land and to bring up their children thereon. The other occupants of the Reserve range--that is, the larger ranch owners--are only entitled to come after the small man. If, after these have been admitted, there still remains an ample pasturage, then the owners of transient stock, the men who drive great tramp

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1/ Chapter II, Section B, p. II-122.
2/ Chapter II, Section A, p. II-1.

> herds or tramp flocks hither and thither, should be admitted. These men have no permanent abode, do very little to build up the land, and are not to be favored at the expense of the regular occupants, large or small.
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> "This system prevents the grass from being eaten out by the great herds or flocks of non-residents, for only enough cattle and sheep are admitted upon the Reserves to fatten upon the pasturage without damaging it. In other words, under the policy you have adopted the Forest Reserves are to be used as among the most potent influences in favor of the actual homemaker, of the man with a few dozen or a few score head of cattle, which he has gathered by his own industry and is himself caring for. This is the kind of man upon whom the foundations of our citizenship rest, and it is eminently proper to favor him in every way."

These objectives are still adhered to by the U.S. Forest Service. On August 5, 1968, the Division of Range Management of the U.S. Forest Service made the following statement of objectives:

> "Small scale operations are typical of the Forest Service grazing land users. One of the most important Forest Service objectives is to promote stability of family ranching units and local communities in the areas of which National Forest System lands are a part. Only 8 percent of Forest Service permittees own more than 500 head of cattle. Approximately 74 percent less than 200 head. Fifty-three percent own less than 100 head."

A detailed exploration of the U.S. Forest Service permit system is contained in Legal Chapter II, beginning on page II-127. In general, to qualify for a permit, it is necessary to own both base ranch property and the livestock to be grazed on the allotment. The primary base property requirements are "dependency" and "commensurability." "Dependent" property is defined as property which needs National Forest System range in order to "round out a properly balanced yearlong livestock operation." 3/

The Permittee must also be ".... able to fully care for the permitted livestock during the period such livestock are not on National Forest Systems land ...." 4/

The capability of the land owned or controlled by the permittee to support his permitted livestock when not on the National Forest is called "commensurability." Under certain conditions, some of these commensurability requirements can be satisfied in ways other than through the provision of land. These may be by leasing part of a ranch or range unit; by providing feed, other than hay, that is grown on the property and actually fed to the animals; or by purchasing hay in accordance with local practice. Thus, the requirement of commensurability has the effect of eliminating the itinerant or nomadic grazing operations from the National Forest.

One further condition associated with the granting of grazing privileges by the U.S. Forest Service is the limitation in numbers. The purpose of the upper limits is "to prevent a grazing permittee from obtaining a monopoly or unfair share of National Forest range." 5/ This upper limit varies with the forest. In general, the limits vary from 250 to 800 cattle and from 1,800 to 4,800 sheep. 6/ The U.S. Forest Service has sought to grant permits to ranchers and farmers for milk cows and for other animals owned for domestic purposes. These restrictions and exceptions all relate to the expressed objective of the U.S. Forest Service to "protect the established family farmers and ranchers against unfair competition in using Forest Service administered range." 7/ An additional objective is to "stabilize local communities by maintaining a wide distribution of grazing use among qualified livestock producers consistent with efficient use of both the public and dependent private grazing lands for livestock production." 8/

The Bureau of Land Management (originally the National Grazing Service), like the U.S. Forest Service, grew out of difficult times. After World War I it continued to become more difficult to control use of the public range. The increased overgrazing led to erosion and decreased forage. Then came the depression of the 1930's. An unusually severe drought at the same time increased the ranchers' hardships. All of this brought about favorable support for federal control over public grazing lands. The Taylor Grazing Act was enacted into law in June, 1934. This Act put an end to free, unregulated use of the vacant, unappropriated and unreserved public land and substituted a plan of permits and leases for the public grazing lands.

Similar to the grazing regulations developed by the U.S. Forest Service, those that were passed into law through the Taylor Grazing Act had the Federal Government assume the position of custodian rather than that of landlord. The objectives of the Taylor Grazing Act were expressed in the title of the Act:

3/ Forest Service Manual § 2231.22.
4/ Ibid. § 2231.23.

5/ Ibid. § 2231.71.
6/ Forest Service Regional Supplements § 2233.8.
7/ Forest Service Manual § 2203 1d.
8/ Forest Service Manual § 2231.71.

(1) to stop injury to the public grazing lands by preventing overgrazing,
(2) to provide for their orderly use, improvement and development,
(3) to stabilize the livestock industry dependent upon the public range.

Considerable discussion relating to protection of the small operator was voiced in debate prior to enactment of the Act. Typical of this sentiment were the remarks of Congressman Taylor during debate:

> "... I know when it is practically established it will be of far-reaching and tremendous benefit, especially to hundreds of thousands of farmers and small stockmen. They are the ones I am primarily trying to protect. But the big stockmen and every community will be benefited by this orderly use and systematic control." 9/

Also, discussion of the preference right of renewal clause reveals that competitive bids were not established as a means for allocation for a number of reasons, one of which was to maintain the quality of opportunity for grazing lands between the small and large operators. 10/

Unlike the U.S. Forest Service, the general allocative procedures for the Bureau of Land Management were specified in its genetic statute. However, they drew heavily on the experience of the U.S. Forest Service for their formulation. These methods of allocation are described in some detail in Legal Chapter II, beginning on page II-7. In general, the Bureau of Land Management allocates forage by several variations of permits, licenses and allotment management plans. In its attempt to provide a procedure for fair and equitable use of the public range, the Statute provides that first preference will be given to applicants for livestock kept for domestic purposes. These licenses are issued without charge. This provision has now been escalated to where free use licenses are issued to any resident Indian applicant in New Mexico District No. 7 to the extent of 100 sheep, or the equivalent in other classes of livestock.

Regular licenses and permits are next issued to qualified applicants, to the extent that the federal range is available, in the following preference order and amounts:

(1) To applicants owning or controlling base property defined as dependent by use, or full time prior water (Class I) to the extent of such dependency, and

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9/ 78 Congressional Record (1934) p. 6364. (Remarks of Congressman Taylor)

10/ 78 Congressional Record (1934) p. 11142. (Remarks of Senator O'Mahoney)

(2) To applicants owning or controlling land or water defined as dependent by location (Class II) to the extent such range is available and which can be properly grazed. 11/

After free use provision, preference in allocating range is, therefore, given first to applicants who control land "dependent by use," which is synonomous with "prior use." To obtain this priority the applicant must have grazed on the public range in accordance with an established formula. Available forage after distribution to these dependent by use applicants is then allocated to those defined as dependent by location. If applicants defined as dependent by use (Class I) graze all of the available range, no distribution of range will be made to applicants defined as dependent by location (Class II).

The Bureau of Land Management dependency differs from the U.S. Forest Service dependency in that a prior use period is established by regulation. Thus a distinction must be made that, for the issuance of a permit, the Bureau of Land Management requires priority of use by commensurate land which is dependent upon the federal range to complete a year-round operation. The U.S. Forest Service requires commensurate property which is dependent upon the National Forest range for a balanced livestock operation, but no priority of use for a certain period is required.

Most of the range land available for forage use in both the national forests and on the public range has been allocated. Therefore, it is only infrequently occasions that new allocations of range privileges are made in accordance with the regulations above. For a considerable period of time, both the U.S. Forest Service and the Bureau of Land Management reduced the number of animals allowed to graze the range through reducing the size of the permits. By reducing the grazing privileges the two agencies took some of the pressure off the federal range in order to stop (or at least reduce) its deterioration. For the most part, management by reducing permitted animals has accomplished what it was supposed to do. As Mr. Boyd L. Rasmussen, Director, Bureau of Land Management, has stated, "With adjudication now nearly complete, we can concentrate on more intensive management." 12/ Therefore, reductions in permit sizes for this reason are mostly behind the ranching industry. In fact, there is every hope that before long the opposite may be the case.

In an earlier chapter, 13/ it was noted that 86 percent of the U.S. Forest Service land suitable for grazing and 70 percent of the Bureau of Land Management land suitable for grazing needed and was susceptible to

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11/ Bureau of Land Management Manual § 4111.31.

12/ Boyd L. Rasmussen, remarks before The American Society of Range Management, Albuquerque, New Mexico, February 13, 1968.

13/ Chapter III, Section A, Table III A-4.

range improvement practices. Assuming that the two agencies will continue to apply better range improvement practices, the anticipated hope is that the number of AUM's permitted for grazing will gradually increase. Therefore, the agencies' policies for allocating privileges to use these increases in grazing capacity are of interest.

Currently the U.S. Forest Service allocates all increases in grazing capacity resulting from revegetation or other range development work done at the permittee's expense to the permittee making the investment. 14/ Other increases in grazing capacity are allocated as follows:

(1) Make it available under temporary permit to existing permittees on the allotment.

(2) Move presently permitted livestock from other allotments which are in need of relief where it is practicable.

(3) Move livestock from Bureau of Land Management administered ranges to the extent they need protection adjustments as provided in the November 5, 1966, Memorandum of Understanding (FSM 2251.44).

(4) Make it available under temporary permit to new applicants, or as an increase, to permittees on other allotments up to the upper limit and to the extent that they are commensurate.

(5) Temporary permits to existing permittees on other allotments whose present permits are at or above the upper limit, whose total ownership of livestock exceed the upper limit, and who are commensurate for the number applied for.

(6) Temporary permits to applicants who do not possess any of the above qualifications. 15/

The Bureau of Land Management has similar classes of priorities in the allocation of such land. Increases in grazing capacity are apportioned to assist in the stabilization of livestock operations controlling qualified base property, with emphasis on the restoration of reductions previously imposed to reach the grazing capacity of the range. 16/ Increases in grazing capacity are also allocated to benefit those responsible for such increases. If grazing capacity grows to exceed Class I qualifications (dependent by use) and is greater than

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14/ Forest Service Manual § 2231.42.
15/ Forest Service Manual § 2232.4.
16/ Bureau of Land Management Manual § 4111.42.

the needs for other multiple uses, increases may go to Class II base property (dependent by location). However, before this group is qualified "full consideration must be given to Class I qualification from other range areas." 17/

Once a determination is made to allocate increased forage to Class II applicants the first preference is to stabilize present operations. 18/ Preferences are made in the following order:

(1) Applicants owning or controlling ranch or farm property located in the immediate vicinity to the available federal range who are presently in the livestock business and who need the federal range to better round out and stabilize their operation. This will not exclude consideration of existing users of the federal range who may or may not own or control property in the immediate vicinity. Primary emphasis will be on need, regardless of how small an operation might be, together with a history of continuance in the livestock business. An effort will be made to favor the operator who has consistently grown livestock over the individual who is in and out of the business as the livestock prices fluctuate. Excess forage will be allocated on the basis of the average number of livestock owned but not utilizing public lands over the preceding three years. These numbers will be obtained by group agreement or from tax records.

(2) Applicants in the same position as (1) except that the ranch or farm property is in the general rather than the immediate vicinity of the available federal range.

(3) Applicants with ranch or farm property located in the immediate vicinity of the available federal range.

(4) Applicants in the same position as (3) but owning ranch or farm property in the general vicinity of the available federal range. 19/

In addition to initial allocation procedures and the allocation of increases in grazing capacity, an analysis of allocative justice and fairness needs to contain something of those policies that pertain to

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17/ Bureau of Land Management Manual § 4111.42B3b.
18/ Ibid. § 4111.42B4.
19/ Bureau of Land Management Manual § 4111.422B4b.

reallocation or transfer of the grazing privileges. For land administered by the U.S. Forest Service, a grazing permit or agreement may not be assigned or transferred in whole or in part. 20/ However, a purchaser of either the permitted livestock or base property of a holder of a term permit may be issued a term permit, provided the permit holder waives his permit to the Government. The purchaser of only the permitted livestock must own the required amount of base property and meet the commensurability requirements. The issuance of a permit is subject to the upper limit restrictions. 21/

Transfers of grazing privileges and rights on Bureau of Land Management land are not provided by statute. For a full insight into the regulations, refer to Legal Chapter II beginning on page II-37. Generally speaking, base property may be transferred to qualified persons without adversely affecting the outstanding license or permit. Also, the license or permit may be transferred without any base property providing that the new owner is properly qualified without it.

Table VII-1 in the Appendix itemizes those lands administered by the several federal agencies. From this table it can be seen that of 273,600,000 acres permitted to be grazed by all agencies outside of Alaska, 262,700,000 acres are permitted to be grazed by the U.S. Forest Service and the Bureau of Land Management. This is 96 percent of all public grazing land outside of Alaska. Although all the remaining agencies administer only 4 percent of the grazing land, reference to their permit regulations are of interest because of the way in which they administer them.

As pointed out earlier, the U.S. Forest Service and the Bureau of Land Management represent the Federal Government in the role of custodian rather than of landlord. The U.S. Forest Service purposely chose this role, and the Bureau was placed in this position by statute after considerable debate on the objectives for the agency. Of the remaining six agencies who control sizeable acreages of grazing land, all but two (the National Park Service and the Atomic Energy Commission) represent the Federal Government as landlord rather than as custodian.

The Atomic Energy Commission follows the principles of the Bureau of Land Management, with whom they have entered into an agreement for managing their Idaho lands in accordance with the procedures as prescribed in the Federal Range Code. All permits are temporary. This has them follow the role of custodian. 22/ Department of the Army Regulation ER 405-1-830 provides that the regulations contained therein

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20/ Forest Service Manual § 2230.3.

21/ Ibid. § 2231.91.

22/ Refer to Atomic Energy Commission in Legal Chapter II beginning on p. II-178.

prescribe policies and procedures for administering leases under the control of several agencies including the Atomic Energy Commission. Land administered in this fashion would be in accordance with the methods of a landlord. (See Department of Defense below).

The National Park Service administers the acreage under its care more or less from the viewpoint that there are not many places in most national parks, monuments, etc., where grazing can be tolerated. It would not be too remiss to make the statement that the policies of the National Park Service generally condemn grazing on most areas and grudgingly permit it when statutes or acquisition agreements require its tolerance. On wilderness and most natural areas it is condemned. On some historical and recreation areas it is permitted if it adds to the historical scene or recreational pleasure. On a few national parks such as the Grand Teton, and national monuments such as Dinosaur, grazing is clearly defined in the statute establishing the facility. The National Park Service is readying itself to administer this service in a professional manner. Although most National Park Service facilities are somewhat different from all others because of differences in the genetic statutes, for the most part fees are in accordance with adjacent U.S. Forest Service or Bureau of Land Management fees. This would place the National Park Service in the position of being a somewhat reluctant custodian of the grazing resource which they administer. 23/

From the viewpoint of Government as a landlord, the Department of Defense has a rational approach. Its allocative procedures depend almost entirely on the free market to allocate grazing privileges. After the Department has determined that grazing is the highest use to which the land can be put, the land is advertised to secure competitive bids. The only exception is provided to prevent a sudden disruption of normal economic activities when large tracts of land are acquired. Leases are made for a period of 5 years, after which they may be subject to competitive bidding again. Under certain circumstances leases may be negotiated, 24/ or renegotiated. Other landlord activities administered within the overall responsibilities of the Department to the nation, are:

(1) With few exceptions, leases will not be made to grow price-supported crops in surplus supply.

(2) The bid price shall be equal to the fair rental value of the property.

23/ Refer to National Park Service in Legal Chapter II, beginning on p. II-78.

24/ Refer to Department of Defense in Legal Chapter II, beginning on p. II-153.

(3) All leases are revocable during a national emergency declared by the President, and in most cases are revocable by the Secretary at any time.

(4) The lessee's interest is subject to taxation by state or local governmental bodies and when so taxed lease is to be renegotiated.

(5) The lessee must agree not to accept any federal cost sharing payments for soil conservation protection made by him upon the leased premises.

(6) When lessee is prevented from harvesting his crop because of revocation of the lease through military necessity, an adjustment shall be made in the rentals and payment made for the value of the unharvested crop.

(7) May provide for the maintenance, protection, repair, or restoration, by the lessee, of the property leased as part or all of the considerations for the lease. 25/

In 1942 a statute (Section 315q, 43 U.S.C.) was passed which was largely, but not wholly, for the use of the Department of Defense. This statute provided that permittees "shall be paid out of the funds appropriated or allocated for such project such amounts ... determined to be fair and reasonable for the losses suffered by such persons as a result of the use of such lands for war or national defense purposes." In the case of the McGregor Range in Southcentral New Mexico, which was withdrawn from grazing in 1955, the Corps of Engineers utilized this statute to compensate permittees for the capitalized value of their purchased permits, as well as for the fair and reasonable value of the grazing resource lost. 26/ It is reported also that the Corps of Engineers compensated permittees for fair values including the capitalized permit value in a number of cases during World War II. 27/

The Bureau of Reclamation also has a landlord's approach for administering grazing on the lands it controls. Its regulations are somewhat similar to those of the Department of Defense.

Details covering the Bureau of Reclamation regulations are in Legal Chapter II beginning on page II-78. The Bureau allocates leases by competitive bidding. Usually these bid leases are for a period of one year. After that year the permittee is given option to renew

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25/ Ibid.

26/ Telephone conversation with Mr. V.P. Szuszitzki, Corps of Engineers, Albuquerque, New Mexico, April 16 and 17, 1969.

27/ Note from Dr. Arthur D. Smith, PLLRC, regarding discussions of his with the Department of Defense.

for 4 years. Individuals not living in the vicinity of the lands are not permitted to bid. Previous use of the land does not constitute a basis for preference if the succeeding bid is not the highest qualified bid. Previous owners are given a preference under certain conditions. This preference is secured through a negotiated lease rather than a bid. Negotiation is also resorted to when the regional director determines that it would be in the best interest of the United States to do so. Reclamation project water users may also be given a preference in the competitive bidding through the device of excluding persons a specific distance away from the project.

The general principle for setting minimum rentals is that rentals shall be comparable to rates charged for other similar public or private lands in the area.

The Bureau of Reclamation does not have general authority to compensate lessees for the value of either the lease interest or range improvement placed upon leased federal land in the event the lease is cancelled because of a reclamation project. However, Congress has by specific project legislation set a precedent for compensating range lessees for the "reasonable value" of range improvements placed upon federal lands when the lands are exchanged, thereby necessitating cancellation of the grazing lease. This is covered in the Navajo Indians Exchange Act of September 2, 1958, 28/ which provides that: "owners of range improvements of a permanent nature placed ... on lands transferred ... shall be compensated for the reasonable value of such improvements ... ." Precedent in the same Act was set for compensating persons for the loss of the use of their lands in accordance with the same standards expressed in 43 U.S.C. 315q, described under Department of Defense above.

The Bureau of Sports Fisheries and Wildlife administers the grazing land under its control in a manner to that of a landlord which wants to keep most of his land inviolate of all but a single use. Under certain rigid conditions, he does let a few graze their cattle.

A full resume of this Bureau's regulations may be found in Legal Chapter II beginning on page II-60. In administering grazing within the system, the Bureau specifies that the grazing of livestock must be considered in terms of its primary value as a management tool to assist in obtaining wildlife objectives. Secondarily, where compatible with wildlife objectives, grazing may be utilized simply to remove excess forage. To obtain these objectives, the Bureau provides extensive guidelines for administration of grazing land within its jurisdiction. The only rights recognized by the Bureau are those rights which may have been retained by a party in the conveyance of land to the United States. In selecting permittees the Bureau expressly provides that notwithstanding " ... any other priority or other consideration, no person shall be selected who is not qualified,

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28/ 72 Stat. 1686.

willing and equipped to perform the special requirements needed to accomplish the management objectives."

Priority is given to persons who owned land within the refuge at the time the Bureau acquired the land. However, even this is qualified. Occasionally the Bureau resorts to the bid process for setting rental fees, but in most cases finds that it has better control over most of its lessees by resorting to "open market sales." In essence, this is establishing rental rates consistent with those in effect in the area. Permittees are often required to maintain improvements and to keep the range in good condition.

The permits are almost always established for either 1 or 5 years. They are expressly not transferable, and may not be subject or made available to any person or interest.

The Bureau of Indian Affairs is not covered in this study. However, this Bureau has long administered the Indian lands in a manner similar to a landlord. Income optimization for the tribal owners of the land has been their principal concern.

Stability

Stability of the livestock industry has been a stated objective of the U.S. Forest Service and the Bureau of Land Management. The other public land agencies are not concerned with this objective.

There seem to be three concepts of stability: (1) stability of the livestock enterprises, which implies security in tenure; stability in operation, i.e., absence of bankruptcies and of unfair competitive pressures, monopolies or fly-by-nights, and protection from encroachment on range lands by non-permitted ranchers; (2) stability of the farm, the encouragement of farmer-owned farmer-operated farms; and (3) stability of local communities and services which are dependent upon the range livestock industry.

The means of attaining these three types of stability were not completely spelled out by Congress, and in most cases stability was considered complementary to the first two objectives of resource conservation and allocative justice. Obviously, if the range were overgrazed and the forage stands were destroyed, both the ranch firms and the local community would be destroyed through the disappearance of the basic industry upon which they depended. In a similar manner those firms which had used the range lands for the longest period of time and which had dependency and commensurability were the ones most likely to withstand price and general business fluctuations.

The U.S. Forest Service seems to have had more in mind than the stability which was a by-product of conservation and allocative justice. Prior use alone could not assure justice in use of the public range. Commensurability and dependency could have been acquired by means other than the ownership of base property. Itinerant sheepmen or cattle ranchers could have provided commensurability through rented property or through matching public lands, such as shipping the animals to the southern plains in the winter. Farmers could have grown sugar beets and purchased hay. Stability of the ranching firms and of the ranching communities seems to be tied in with ownership of that base property which would be devoted only to producing hay for the remainder of the year. Thus, through these means the local area was assured that the range livestock industry would continue to exist through good times and bad.

It is also possible that by making stability a policy objective, the U.S. Forest Service was able to make the selection of ranchers to be invested with permits much more easily. They could then eliminate those who could not meet the dependency and commensurability requirements, thus decreasing the number of individuals who would qualify as permittees.

Stability of the family farm is also a stated objective of the U.S. Forest Service. This objective was to be accomplished through the limitation of the number of privileges granted a permittee. At the same time, limitation of numbers allows the U.S. Forest Service to spread the use of public range lands among a larger number of permittees. This procedure also has the advantage of decreasing the number of ranchers who are denied permits to use forest lands for grazing.

The Bureau of Land Management was directed by the Taylor Grazing Act to "stabilize the livestock industry dependent upon the public range." In carrying out this objective it has not limited the number of animal units which any one rancher may graze on the public domain, nor has it considered the stability of the ranching community, or the family-sized farm unit as stated objectives. As a consequence, the Bureau of Land Management has depended largely on prior use and commensurability to secure the stability of the ranching industry referred to in legislative history. Stability in the interpretation of the Bureau of Land Management is the stability of the ranching firms which first used the range, and their successor firms who have acquired grazing privileges either through purchase or inheritance.

None of the other agencies which have made land available for public grazing have concerned themselves with the objective of stability of either the ranch firm or of the communities dependent upon it.

Multiple Use

Multiple use has been practiced from the earliest years of management under the U.S. Forest Service. Gifford Pinchot, as a member of the Public Lands Commission of 1903-04, had opposed the locking up of forest lands, and the Commission report recommended among other provisions the selling of timber on public lands at appraised values, allowing free use of timber in limited amounts by homesteaders and miners, permitting lands in the Forest Reserve suitable for agricultural purposes to be homesteaded in 160-acre units, and authorizing the President to set aside as grazing districts lands suitable for livestock grazing and to permit grazing for a fee.

Representative Wayne N. Aspinall has summarized 1/ the Pinchot-Roosevelt philosophy as recognizing:

> "That notwithstanding our abundant resources, we are not so favored that we can either lock them up on the one hand or either throw them away or despoil them on the other. Their concept was a positive one of use; conservation to Pinchot and Roosevelt was 'wise use'. President Roosevelt in 1901 said:
>
> > 'The fundamental idea of forestry is the perpetuation of forests by use. Forest protection is not an end in itself; it is a means to increase and sustain the resources of our country and the industries which depend on them ....'
>
> "Speaking in 1903, Pinchot said:
>
> > 'The object of our forest policy is not to preserve the forests because they are beautiful--or because they are refuges for the wild creatures of the wilderness--but the making of prosperous homes--every other consideration becomes secondary.'

1/ Rep. Wayne N. Aspinall in a paper presented at the Conservation Banquet, Utah State University, Logan, Utah, May 3, 1963.

> "Conservation as wise use soon evolved into the idea of multiple use of resources. Resources found an interrelated unity--it was not possible to control rivers without taking account of the orderly development of other natural resources. Above all, conservation was the wise use of the earth and its resources for the lasting good of the people--the foresighted utilization, preservation and/or renewal of forests, waters, lands, and minerals for the greatest good of the greatest number for the longest time.
>
> "Some close students of the period find that conservation was not so much a moral crusade or a part of the progressive political revolt against monopoly, not so much the banner of a crusading political march against the interests led by one of the most able, vigorous, and successful Presidents of our century; rather it was a scientific movement, in essence the application of rational planning to promote the efficient development and use of all natural resources....
>
> "We are therefore faced with an increased responsibility to satisfy the demands and needs of our people. All of the old needs, such as the homes that Gifford Pinchot spoke of, are still with us as well as the less tangible things such as areas for mass recreation and primitive and wilderness-type areas to be preserved for man's solitude or for scientific research.
>
> "The really big problems that we have facing us, I submit, are: (1) how to develop the principles to guide us and (2) the delineation of procedures to be followed in accomplishing our objective."

Grazing had always been practiced on the forest domain. Its regulation and the charging of fees for grazing privileges were instituted shortly after the transfer of the Forest Reserves from the Department of the Interior to the Department of Agriculture in 1905. As early as 1906 a bill recognizing the protection of fish and game as one of the proper functions of the U.S. Forest Service was passed and an appropriation of funds was provided for this function. 2/ The recreational uses of the forest lands were recognized by Congress when in 1915 it passed a law authorizing the Secretary of Agriculture "to grant permits for summer homes, hotels, and for similar uses in the national forests for periods not to exceed thirty years." 3/

2/ John Ise, The United States Forest Policy, New Haven, Yale University Press, 1920, p. 303.

3/ 16 U.S.C. § 497 (1964).

The multiple use concept had become a well established policy objective of the U.S. Forest Service before the passage of the Taylor Grazing Act, but no statutory provision existed for multiple use until 1960 with the passage of the Multiple Use-Sustained Yield Act. This Act declared that "the National Forests shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes." 4/ Multiple use for the U.S. Forest Service thus became mandatory.

The Multiple Use-Sustained Yield Act of 1960 was followed in 1964 by the Classification and Multiple Use-Sustained Yield Act. This law directed the Secretary of Interior to classify all lands administered by the Bureau of Land Management which should (1) be disposed or (2) be retained and managed for multiple uses and sustained yield.

As a result of these two acts, both the U.S. Forest Service and the Bureau of Land Management have included multiple use among their stated objectives. Thus, the U.S. Forest Service states as an objective, "Develop the range resources of all National Forest System lands to their reasonably attainable potential and manage them for grazing in harmony with their interrelated uses." 5/

The Bureau of Land Management has also broadened its objectives of grazing land management to include multiple use. The Bureau of Land Management manual states:

> "The availability of land for grazing use and the amount of forage available for use by livestock will be determined after giving consideration to the wildlife, conservation, and other multiple use demands. Management plans and range improvement programs will include and be correlated with other uses and needs of the land." 6/

With respect to Section 15 Lands, the Bureau of Land Management has also expanded its objectives to embrace multiple use. After reiterating the charge given it in the Taylor Grazing Act relating to conservation and stability of the livestock industry, the manual states as the objective of management of lands under its jurisdiction, outside grazing districts and exclusive of Alaska, the obtaining of "high sustained yields of forage for use by livestock and wildlife in balance with long-term management objectives. Rangeland resources include forage, soil, watershed, recreational and aesthetic values and wildlife habitat." 7/

4/ 16 U.S.C. § 528 (Supp. 1967).

5/ Forest Service Manual § 2202.

6/ Bureau of Land Management Manual § 4111.31 A.

7/ Ibid. § 4120.02 B.

For the other public land agencies multiple use has little application because these agencies generally have one major objective to which all other objectives become subordinate. If grazing is permitted it is usually presumed that it in no way competes with the primary objective of the agency, be it defense, wildlife habitat, recreation, or reclamation. As stated by the Bureau of Sports Fisheries and Wildlife, grazing of livestock is considered as a primary tool to assist in obtaining wildlife objectives. Secondarily where compatible with wildlife objectives, grazing is utilized simply to remove excess forage.

Multiple use as an objective has an appealing sound -- "all this and heaven too" -- but strict adherence to it complicates range management. As long as all uses are complementary no problem arises; all uses can be allowed without restricting any of them. At the point where the various uses become competitive, however, a difficult problem arises in the determination of how much more of one use would best serve general welfare at the expense of how much of another use. Since many of the uses do not have an established market value, the determination of the optimum combination of uses becomes particularly difficult. As Representative Aspinall was quoted above, the really big problems are "(1) how to develop the principles to guide us and (2) the delineation of procedures to be followed in accomplishing our objective." As neither of these have yet been accomplished in a satisfactory manner, an opportunity is presented wherein the administrative agencies are allowed to operate (or, perhaps, are required to operate) in accordance with their own judgments, and without benefit of specific guidelines from Congress. This permits the agencies to make decisions and then justify the decisions by claiming the need for protection of competing multiple uses. Until the rational planning of the past has been expanded to utilize the planning tools of today, the establishment of an optimum combination of uses in an objective manner will be difficult, if not impossible.

Emerging Objectives

The objectives discussed above cover the major expressed goals of public land administration. There are, however, other objectives which are more implicit than stated. The fact that public lands could always be acquired for uses other than grazing if the proposed use was to satisfy a higher need than grazing implied that one of the objectives of public land management was to provide for future needs for land which could not be accurately evaluated at the present time. This objective may be stated as maintaining flexibility in land use to meet the changing needs of a dynamic society. In administrative practice, therefore, before land could be withdrawn for homesteading, the permittee must demonstrate that he could put the land to a higher use than was being provided by grazing. For agricultural purposes this usually meant that water could be economically applied for the production of crops. The entire multiple purpose objective can be interpreted as an application of this principle also. At the present time the land administrators provide for various uses that are currently in demand, but at the same time they keep the land available for more intensive use for any of the purposes for which multiple use can be applied. Should public welfare be better served by providing more land for recreation purposes, no actions are being taken at the present time that would prevent the land from being used more intensively for that purpose.

The essence of the flexibility objective is provision for future generations. No one is certain at the present time what future generations may want or need. Consequently, the tendency is to maintain ownership of the land in public hands and not alienate it by putting it to private purposes. The endeavor is made to maintain it in a condition fairly similar to its original state so that later generations will be able to use it as nature provided. In this manner, future generations will be permitted to reconsider and reevaluate these resources and adapt them to their needs.

This objective of flexibility seems to be emerging as an extremely important one. If it were not an important consideration in the minds of public land administrators, the best procedure would be to classify each parcel of public land for its best current use and to manage it primarily for this current use. Under such a procedure multiple use would not exist in the sense that the term is used at present. Instead, each parcel of land would be managed for a primary use and all competing uses would be restricted.

Another objective that has been slowly forming since the end of World War II has been one relating to the Government's proprietary interest in the public grazing lands. This has been a slow process because nearly all the early objectives had placed the Government in the role of custodian rather than landlord. The early concerns for stability, against monoply, for the family farm and for conservation of the land not only by stopping its deteriorations but also through wise use, had virtually hidden all landlord considerations in the custodial closet. However, World War II was followed by a more affluent period than had been experienced for almost a generation. New equipment and new technology were making possible another expansion into the use of what had been marginal lands. The stored up desires for more meat than had been permitted during the war and that could not be afforded before the war, brought public land once more into the minds not only of the ranchers but also of the consumers. In its desire to provide more efficient and better government, Congress established the Commission for Reorganization of the Executive Branch in 1947. Known as the Hoover Commission, this group made exhaustive reviews of federal policy in all fields in 1947-49 and again in 1953-55. A strong movement to get government out of business, including the land management business, stemmed from that. Still, the instincts of both Congress and the land agencies kept a strong check on the disposal of the public lands. To the contrary, an attitude developed in all Secretaries of the Interior to retain land rather than to classify it for disposal. This in turn brought about new emphasis on how the land should be managed, and particularly how more of the land related resources could be placed on a market basis.

In 1952 the Independent Offices Appropriations Act directed all agencies to place all charges and fees on the same basis, and to fix these charges and fees at a rate high enough to cover the cost of service. The principal result of this, insofar as grazing was concerned, was to continue a series of events which finally culminated in 1968 in a recommendation to charge a fee which would effectively absorb the capitalized value which had built up in the permits allowing grazing on the public land.

Because of the restraints of old policies on the land agencies, the principal direction of the change from being a custodian to that of a landlord has been reflected in the development of more sophisticated management plans. All of this in turn has led to a certain concern on the part of Congress because the expanded management actions of the U.S. Forest Service and the Bureau of Land Management have required acts that are probably beyond the strict power or authority of the agencies. 8/

Rural poverty and its relationship with the public lands is another goal that has been developing in recent years. The security

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8/ Hon. Wayne H. Aspinall in remarks before the Section of Mineral on Natural Resources Law at the American Bar Association Annual Meeting, Chicago, Ill., Aug. 14, 1963.

of the family farm has always been an objective of the U.S. Forest Service. Many of the administrative procedures relating to permit allocation and upper limits have stemmed partly from this objective. Therefore, it is only natural that the public land administrative agencies should concern themselves with rural poverty.

Integration of public land policies with general agricultural policies relating to agricultural surplus and production control is another objective that seems to be emerging in both the goals and actions of the two main land agencies. Those land management agencies that represent the government as landlord rather than as custodian, and that lease their grazing lands on a bid basis, usually specify that the land may not be used to grow price supported crops in surplus supply. Outside of these requirements, however, little has been done in the past to try and coordinate the national policies that relate to land but are not administered by the agencies that are responsible for the public land. Coordinative administration of agencies within a single department is difficult enough. To accomplish this between agencies in different departments is often impossible. Here again, before such a task can be accomplished with any practical hope of success, a plan must be developed that will permit some rational means for weighing alternative uses of the country's resources against the national, regional and local needs. An awareness of these needs by some in Congress is probably exemplified by Representative Aspinall in a discussion concerning maximum use and less than maximum use of public lands when he said, "All I plead for is the opportunity to know what we are doing."9/ It would appear to be difficult to disagree with this statement.

9/ Rep. Wayne N. Aspinall in remarks at a meeting of the Natural Resource Committee of the Chamber of Commerce of the United States in Denver, Colo., Sept. 27, 1962.

SECTION B

MAINTENANCE, DEVELOPMENT AND PRESERVATION OF PUBLIC FORAGE LANDS

An expression which has been used in past Interior Department Appropriation Acts covering funds for the Bureau of Land Management reads: "For the administration of the public lands and their resources, ... including their protection, use, maintenance, improvement, development, and disposal; ..." 1/ All of these words still are descriptive of the responsibility that the Bureau of Land Management has for the public domain. However, over the years the emphasis placed on the individual words have changed.

Disposal, acquisition and retention are the subjects of separate investigations and judgments by others in this series of studies for the Public Land Law Review Commission. Nevertheless, a few comments concerning how they relate to the public forage lands are in order.

In 1893 there were still close to 600 million acres of land open to entry and settlement under the general land laws of the United States, exclusive of Alaska. This was more than a fourth of the land area of the whole country. It was beyond the imagination of most people at that time to believe that the opportunities that had always been associated with the frontier lands were soon to be curtailed. Very few people in that year gave any credence to Frederick Jackson Turner when, in a remarkable hypothesis, he suggested that the frontier of opportunity afforded by the public domain was closed. (3) Today not many people would argue that in the main, the concept of the public domain has veered from one of land held in escrow pending transfer of title, toward one of reservations held in the interest of the collective owners - the people of the United States. (3)

This does not mean to say that the Federal Government does not dispose of some of its lands from time to time. On the contrary, the advent of larger and more economical pressure irrigation systems together with the development of well-financed farm management organizations has made some of the marginal desert lands in parts of the West more desirable than ever. It does seem, however, that the opportunity afforded by the land's availability will be only minor because of being available for disposal. Future opportunities appear to be primarily concerned with the wisdom relating to the judgments of protection, use, maintenance, improvement and development of the land. Also, today, "preservation" might be more descriptive than "protection."

As complicated as both the public and Congress may have thought federal land policies to have been in the past, they were quite simple when compared to the complications imposed by the additional variables associated with multiple use. Natural resource judgments are based on many things. Some are economic; some are social; others are political. A portion are based on scientific fact. Other portions are based on facts stemming more from emotions than from science. When looked at it in this manner it is easy to see how different judgments can come from supposedly one set of facts. What may not be understood is that some of these facts have different interpretations by different people. This is because, even though they may be using the same words, they are speaking a different language insofar as the meaning of those words are concerned. Then, when all of this is further complicated through being the subject of somewhat different management techniques by different agencies, based on somewhat different philosophies of management and having not only somewhat competing goals, but also competing ambitions for the resources, it is not difficult to see why there is some concern about these judgments.

1/ 61 Stat. 463.

What is called for, of course, is a clear, rational means for making these judgments based upon precisely recognized and understood facts, in accordance with explicit objectives to meet the fully understood needs of the nation, region, community and family. Therefore, all that needs to be done is to pursue that means, using those facts in accordance with those objectives to solve those needs.

The only problem concerning this is that to date no one has conscientiously and systematically developed a complete list of those needs. For that matter, no one has yet devised a means for placing relative values against some of those needs if such a list should ever be devised. In addition, although the several federal land managing agencies have either prescribed, or have had prescribed for them, numerous objectives, these objectives are conflicting in some respects within the same agency as well as between agencies. Also, great inflexibilities have been built in to the way these objectives are administered and, again, relative values and priorities have not been spelled out. Although knowledge of the physical facts are becoming better known as the years go by, there is still much to be learned. The most serious neglect so far in this quest for facts probably has been in research. It seems reasonable to ask in this regard why research in the natural resource area has not been applied as assiduously as it has in general agriculture. Lastly comes the clear, rational means for making the judgments. Unfortunately, no method has been devised for doing this. That is, no system has been developed whereby the advantages and disadvantages of alternate combinations of facts, assembled according to alternate plans, having alternate objectives in mind, to meet alternate requirements can be compared. Until some such means has been developed, judgments primarily will be based on the professional discretions of the individual resource experts, framed in a rather imperfect economic model that has been considerably modified by political practicality.

As the Honorable Wayne N. Aspinall has said, "The really big problems that we have facing us ... are: (1) how to develop the principles to guide us and (2) the delineation of procedures to be followed in accomplishing our objective." 2/

In the text which follows in this and succeeding sections of this chapter, some of these problems, principles and procedures will be explored and analyzed.

The Efficiency Model as a Standard for Performance

The imperfect economic model mentioned above is still the best standard against which to test the performance of any agency or organization. Economic efficiency as a goal conforms with general governmental economic policy. It may not always be a dominant goal. At times it may even be almost nonexistent. However, in terms of total governmental policy it has always been part of the mixture. It is unfortunate that a better comparative standard has not been developed. An overreliance upon economic equations in an imperfect natural resource environment, where economic logic is often subservient to political realities, can make economists seem to be somewhat naive to politicians. By the same token, until a better standard has been developed, the economic model can still be a most useful analytical tool when manipulated by experienced politicians and economists working together. A brief description of the economic reasoning behind an efficiency model used to analyze natural resources may make the understanding of its use in this analysis somewhat more clear.

Over the years economists have perfected the use of such models for many analytical applications. Under ideal conditions they are usually termed competitive models because they represent the manner in which economic firms would operate under perfect competition. If performance does not conform to these models, the presumption is that the competitive model does not fit the operating conditions. When this happens, there may not be perfect competition; that is, many buyers and many sellers. There may not be perfect knowledge by all managers. Or there may be non-market considerations that must be taken into account such as public welfare, collective wants, or external economies or diseconomies. These exceptions, and others, may cause the actual economic performance to deviate from the competitive model. If so, allowances must be made for these variations when judging the effectiveness of those performing their assigned tasks.

2/ Wayne N. Aspinall, Paper presented at the Conservation Banquet, Utah State University, Logan, Utah, May 3, 1963.

In a mixed economy, one in which perfect competition is the exception rather than the rule and where the government at various levels performs many of the management functions, the competitive models are somewhat misnamed. Performance standards in a mixed economy should not be based upon the presumption of pure competition. Pure competition has not worked in these areas. If it had, there would be no need for government control. Nevertheless, even in situations of complete government control and administration, there is much to be gained by comparisons with condition under pure competition. Under these conditions, the term efficiency model is used rather than competitive model. Also, instead of setting up assumptions of perfect competition for comparison, normative assumptions are used which are based upon the various goals and objectives to be attained. The normative assumptions set forth the objectives which are to be optimized within the constraints of the other competing objectives.

In this and the following sections, the procedure will be to consider the objectives of public land policy and to analyze them as to the degree of success or failure in accomplishing their aims. Whenever applicable, efficiency models will be used as standards for comparison. The data presented in earlier chapters of this report will be analyzed and used to throw light on the degree of accomplishment of the various agencies in attaining their objectives.

It should be emphasized that the analytical statements expressed in this report in no way reflect upon the effectiveness of public administration. Ideal performance cannot be expected from any administrative agency because:

(1) the objectives may not be attainable;

(2) the objectives may not be explicit as to what exactly is expected of the agency;

(3) cooperation or compliance may not have been secured from the land users;

(4) other competing objectives may have been emphasized more intensively by the agency.

It is hoped that the following analyses will help indicate the directions toward which the Public Land Law Review Commission and the Congress may wish to move should they desire either to emphasize a given objective more strongly or to select alternative procedures to secure the same results.

Economic Efficiency of Rangeland Investments

Range lands for the most part can be classified economically as a flow resource. This is contrasted with a fund resource, such as mining. In some limited cases, range land may also have all the characteristics of a fund resource. In addition, many of the flow resource range lands may be further classified as flow resources having a critical zone. This means that if, through bad management, they are permitted to deteriorate beyond a certain critical point, a large portion becomes irreversible. That is, they cannot be restored to their previous level of productivity through economically sound investments. On the other hand, large areas of the public domain are reversible. Grazing lands are reversible when, through economically sound investment, they can be restored to their original yield, or to even better than their original state for grazing purposes.

In considering the public land area suitable for grazing, estimates have been made indicating the area requiring range improvement practices (investment to improve the range) or as needing just good range management. 3/ Table IV B-1 shows that for all the federal land suitable for grazing (224,055,000 acres) only 28 percent needs management only. The remainder, 72 percent, requires an improvement investment of some sort.

Irreversible lands will be used to their optimum economic value if they are grazed only to the point of sustained yield. This optimum also assumes that there is no decrease in value of the resource over time. If the contrary should be true, and there is an expectation that the value of forage will diminish at a sufficiently rapid rate, then there will be a possibility that returns to the forage production would be maximized, in the course of time, if over grazing were permitted. This could be true even if the lands would deteriorate as a result to a point where they actually become irreversible. The extent to which such over grazing would be economically sound, would depend upon the amount by which current livestock production could be increased over the sustained yield level, upon the prevailing rate of interest, and upon the rate of expected decline in prices in the future.

A reverse situation exists when anticipated resource prices increase. Under these conditions, it may be economically sound to restrict grazing drastically at present in order to permit the range lands to be improved. Then greater production of livestock could occur at some future time when demand would be greater than at present. The extent of current restriction on grazing would depend upon the degree to which future

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3/ See Chapter III, Section A, page III-11 for a more complete discussion on range condition classes.

TABLE IV B-1

ACREAGE OF LAND SUITABLE FOR GRAZING AND THE PERCENTAGE OF THIS AREA THAT NEEDS AND IS SUSCEPTIBLE TO RANGE IMPROVEMENT PRACTICES, 1966

		Percent of Land Suitable for Grazing		
Agency	Acreage of Land Suitable for Grazing a/	Needs Management Only	Needing Range Improvement Practices	Total
	(1,000 Acres)			
USFS	49,300	14	86	100
BLM	160,800	30	70	100
NPS	1,400	44	56	100
BSFW	4,800	57	43	100
BR	4,000	52	48	100
BIA	800	20	80	100
DOD	3,000	22	78	100
TOTAL	224,100	28	72	100

a/ The acreage listed as suitable for grazing is less than the area permitted to be grazed by the Forest Service, the same for the National Park Service, and more for all other agencies.

(Facing page IV-38)

carrying capacity of range lands would be improved by such restrictions now, upon the expected future price increases and upon the rate of interest on increase foregone at the present time.

Of the three alternative approaches to range land conservation listed above, the second, that of permitting the range to deteriorate in order to maximize total income, should be rejected on a priori grounds. There is no evidence that the demand, and consequently the price of products derived from range forage, will decrease in the future. On the other hand there is considerable evidence that the contrary is true. Demand for beef products shows a significantly high degree of price and income elasticity, and projections indicate that as income rises and population increases there will be a much greater consumption of these products in the future than today. 4/(2)(4)(1) There is also the problem of demand comparisons over a long period of time. It is impossible to measure with any degree of accuracy the need for a resource that future generations will have as compared with the need for it today. One important reason for government conservation programs is to keep resources intact as far as possible for future generations, and to protect them from wasteful practices of our own generation. Therefore, even if long term economic returns from over grazing public land appeared to be unusually profitable, it still would be highly doubtful that grazing these lands to irreversibility would be a good policy. This is true even if the irreversibility appeared to be such that the lands could be economically restored at a later date by proper investment. The old rule of everybody's property becoming anybody's property when the question of financial responsibility is raised could be expected to be applied here. Maintenance and improvement appropriations are difficult

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4/ Araji, Ahmed A., Economic and Social Factors Affecting the Location of the Cattle Feeding Industry. Araji used a five variable correlation model to explain the variation in the price of beef. These variables gave a coefficient of multiple determination (R^2) of 0.967. However, disposable capital income explained, 72.1 percent of the variation in retail beef prices. In a similar vein, Langemeier and Thompson showed that the income elasticity of all beef was 1.17. This means that for every 1 percent increase in per capita income, the per capita consumption of beef will rise 1.17 percent. (Langemeier, T. and Thompson, R.G. "Demand, Supply and Price Relationships for the Beef Sector, Post-World War II Period," Journal of Farm Economics, Vol. 49, No. 1, Part I, Feb., 1967, p. 178.)

enough to get without deliberately creating a situation that would demand a future increase in the appropriation. Thus, political practicality would probably prevail over economic theory, and the public land would be managed so that it would not be overgrazed.

If the third alternative were chosen, that of not harvesting the resource in expectation of greater profits in the future, the same types of difficulties would be encountered. Suppose that a decision were made to lock up the resources without use in order to keep them intact for some distant future generation to exploit for its own benefit. In doing this the risk would be run of preserving a resource that may neither be wanted nor needed in some future period. An example of this is some of the past soil conservation programs. During the past four decades, considerable sums have been spent on some ground for extensive soil conservation practices only to discover that capital, in the form of fertilizer, insecticides, herbicides and irrigation water, produced greater quantities of livestock and crops at cheaper costs than would an equal investment in the conservation programs.

It seems, then, that good public policy would suggest that the public land agencies follow neither a soil exhaustion approach to forage land use, nor a policy of attempting to increase forage production on the public lands through intense restrictions on grazing or non-use of the lands. Thus the best alternative mentioned for lands which represent a flow resource, which are not reversible and whose products are not storable, is to follow a policy of sustained yield. This has generally been the actual practice which the public land agencies have pursued with respect to conservation. As pointed out earlier in Legal Chapter II (pp. II-7 and II-126), public land agencies have stated repeatedly that their purpose is to maintain a sustained yield on their grazing lands or, alternatively, to prevent a further deterioration of the range.

This position is supported by additional economic theory also. If there is no presumption of a change in future economic or physical relationships, or if the nature of these future relationships is uncertain, the safest assumption to make about the future is that the utilization of each year or each period is of equal importance to that of every other year or period. Sustained yield cropping in effect makes this assumption. Therefore, this practice will permit society in the future to utilize the resources in the same quantity as it does at present.

Under the above assumptions, the policy followed by the public agencies would also be the policy followed by private individuals if the land were under private control. An individual rancher who has invested in livestock buildings and equipment for a livestock enterprise finds it to his advantage to maintain a sustained yield over the years. This also permits him to sell his land or to pass it on to his heirs in a state of production as high as it was when he acquired it. In this respect, optimum range use from the public point of view would be the same as optimum use from the private point of view.

The sustained yield approach has other features to commend it. One is that it tends to stabilize the ranching industry over the years. Before the U.S. Forest Service and, at a later date, the Grazing Service (later known as the Bureau of Land Management) began to regulate use of the range, range lands were deteriorating rapidly under free use. Each rancher had every inducement to put as many animals as possible on the range, because he knew that if he did not do so his neighbors would. Conversely, each cattleman or sheepman knew that restricting his livestock numbers to the carrying capacity of the range would not bring about a sustained yield level of grazing, but only an inevitable expansion of numbers on the part of other ranchers. Under these pressures the range land began to deteriorate rapidly. When the federal agencies regulated the use of the lands, the competitive struggle for increasing numbers on the range was curtailed. This in turn stabilized the range livestock industry which was headed for extinction through soil exhaustion. The local communities which depended on the industry for their existence was also stabilized.

The land management examples described above apply to the 28 percent of public land suitable for grazing that will respond to management alone. Referring to Table IV B-1 once more, it will be seen that 14 percent of the grazing land managed by the U.S. Forest Service and 30 percent of the grazing land managed by the Bureau of Land Management falls in this category. Although in the minority, the 28 percent of total grazing lands that will respond to management alone means that about 62,700,000 acres of federal land can be grazed best on a sustained yield basis.

Rangeland Capable of Development or Improvement

The above analysis applies only under the rigid assumptions concerning the classification of range land that are stated. These may be summarized as follows:

1. Forage production under excessive grazing will deteriorate below a critical zone above which it could restore itself.
2. Once land has passed through this critical, irreversible zone, then restoration or improvement of carrying capacity cannot occur through economically justifiable investments in the form either of long-term capital improvements or of decreased animal use.
3. The commodity is not storable.
4. The resource is irreversible.

If these conditions do not exist or, more specifically, if the land is capable of improvement through economically justified investment, then sustained yield, in the sense of natural growth of forage without investment, will not maximize forage production.

As mentioned above, much more of the public land is classified in this category than in the management class. Referring once more to Table IV B-1, 86 percent of U.S. Forest Service land needs range improvement investments. The Bureau of Land Management has 70 percent of its land in this classification. The 72 percent of the total federal land that is suitable for grazing and that needs range improvements equals about 161,300,000 acres.

In order to describe the economically optimum level of investment for this land, an economic model can be simulated which will compare what would occur under conditions of private ownership with perfect competition. For this model it will be assumed that the range lands are under private ownership and that the rancher:

- has perfect knowledge of the effects of his investment upon forage yields;
- will attempt to maximize his income;
- has access to the capital necessary for him to expand his capital inputs to the point of maximum returns;
- and has determined that this range investment would be equal or superior to any alternative use of capital.

Under these assumptions, each rancher would expand his capital investment for improvements to the point where his last dollar of improvement cost would produce an increased yield which, when sold, would equal one dollar. In other words, he would expand his investments to the point where marginal costs would equal marginal returns. Figure IV B-1 illustrates this concept graphically. In Figure IV B-1 the X axis represents the cost of improvement in dollars. The Y axis is the production of meat in pounds. Point Y represents the sustained yield level of production; that is, the production level with good management but without any investment costs for range improvements. The curve YR is the increased production function as improvement costs increase. The increments of X and Y represent the marginal dollars of improvement cost invested (X) and the marginal pounds of meat produced (Y) that is attributable to the increased forage resulting from that last investment.

The efficient rancher would expand his investment in range improvement to the point where the incremental cost just equals the incremental return from the meat. Since the production function is concave upward, as more investments are made the cost of investment per pound of meat produced, $\Delta X/\Delta Y$, becomes larger. Thus, if X_1 is the point at which the incremental improvement cost exactly equals the incremental value of the additional meat produced, Y_1-Y, then that is the point where marginal costs equal marginal returns. If investments are expanded to X_2, $\Delta X/\Delta Y$ at that point would be greater than the average price of meat, and income will be decreased. Conversely, if less investment than X_1 were made, then $\Delta X/\Delta Y$ at that point would be less than the average price of meat, and an additional investment for improvements could be justified to increase income. From this it can be seen that an efficient rancher will expand his investments in range improvements to the point where the differential $dX/dY = P$, when P equals the average price of one unit of meat. At this point, and at this point alone, will his income be maximized.

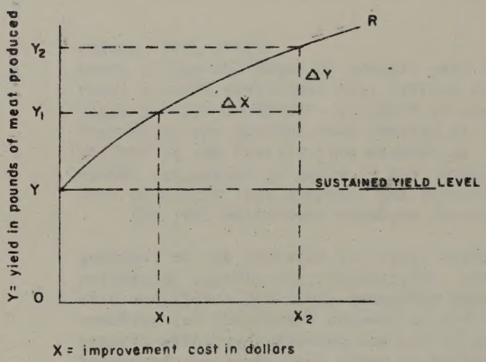

Figure IV B-1

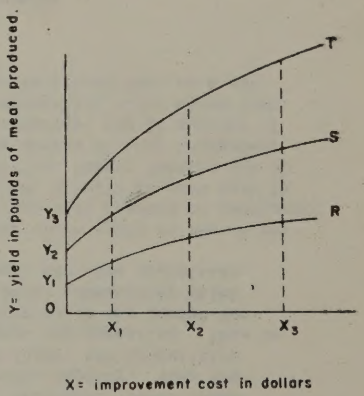

Figure IV B-2

This generalization not only holds for a given portion of range land with a given response to capital inputs, but is equally valid for different qualities of range land. In Figure IV B-2 are represented three qualities of range land, R, S, and T. Land R is the poorest, yielding Y_1 production of meat on a sustained yield basis. It responds to improvement investments in accordance with the curve Y_1R. On the other hand, Y_3T is the best of the lands, yielding Y_3 production on a sustained yield basis, and responding to investments along the curve function Y_3T. For the low quality R land, little response is secured from improvement investments. Therefore, only X_1 dollars are invested in this land, the point where marginal costs equal marginal return. If the same investments were applied to S or T, these lands would be producing below their economic optimum. Consequently, investments on land type S will be expanded to X_2, where his income will be maximized. The same investment point for T land is X_3. This may be expressed mathematically as $dX_1/dY_1 = dX_2/dY_2 = dX_3/dY_3 = P$, where P is the average price of one unit of meat produced.

Investment in Dollars

Variations may also be used in optimizing range forage production. It is not necessary that range land, once improved or rehabilitated economically, be managed on a sustained yield basis. Under these conditions the land is reversible and so may be treated as a reversible resource. For this land it may be advantageous to allow the new stands of grass to become overgrazed and thus yield higher overall production over a span of years. Later the land can be improved and rehabilitated again. Figure IV B-3 illustrates such a possibility.

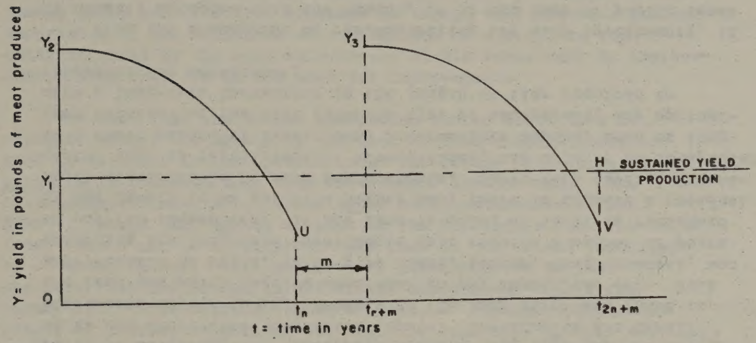

Figure IV B-3

The feasibility of an exploitative program depends upon several factors, such as:

1. The extent to which the sum of the areas under the two production curves Y_2U and Y_3V (which is the area OY_2Ut_n plus the area $t_{n+m}Y_3Vt_{2n+m}$) exceeds the area under the sustained yield production line over the same total time period (area OY_1Ht_{2n+m}).

2. The time required to rehabilitate the range after it has deteriorated below economical grazing limits (m span in time).
3. The increased cost of keeping the livestock off the range while it is being rehabilitated.
4. The rate of interest on investments.

In summary, the theory outlined above for manipulating a reversible resource expresses the well-known concept in economics termed equimarginal returns. This theorem states that on land of all qualities, capital and/or labor will be added until the value of the last unit added equals the price of the product purchased on all qualities of land.

Investment Policies, User Benefits and Equity

In the dissertation above, it has been shown that for land which needs management only, but which has a critical irreversible zone, the best management practice is to graze in accordance with the sustained yield values of the land. This has been shown to be the best practice for either private lands or public lands of this classification.

Now, how do the theories of (1) marginal costs equaling marginal returns and of (2) equi-marginal returns apply to the operations of the public land agencies? To answer this it will be necessary first to determine the difference between long-term capital investments and short-time production inputs. Investments are usually considered inputs in improvements to the land which are fixed to the land and which require some time to pay themselves off. Such improvements as wells, water pipe lines, fences, brush removal, and reseeding are long-term investments that require a number of years to pay for themselves. If the land is sold, or if it is reclaimed by the agency to be put to a higher use, there is usually a residual value attributable to such improvements. Short-term capital investments, such as fertilizers or insecticides, can usually be recaptured in a short period of time. Some intermediate inputs, such as long-term rotation or the rest rotation type of management, may approximate a long-term investment in the length of time required to recapture the investment.

From the standpoint of responsibility for such investments, it is usually accepted that the tenant, or in the case of public lands the permittee, should make the short-term investments because the contributions to yields are recovered in a short period and usually during the term of his tenancy or occupancy of the land. For long-term investments that add to the permanent productivity of the land, the landlord usually makes the investment. At times the landlord has some special arrangement with the tenant (permittee) whereby the landlord and tenant invest cooperatively, or the land rental conditions are such that the tenant can make his own investments and expect to gain a reasonable return from them. In those cases where the landlord retains an option to make other uses of the land, a rental clause is usually included which provides that the tenant will be compensated for the unrecovered portion of the improvement.

As stated earlier in Section A of this chapter, the Bureau of Land Management has had statutory responsibility for cooperating with permittees in improving the land. By regulation the Bureau also had the responsibility for seeing that the permittees got some compensation when possible for their residual investments for improvements whenever they were deprived of their permitted grazing

land. In a fairly recent talk 5/ before the American Society of Range Management, Mr. Boyd L. Rasmussen, Director of the Bureau, summarized their long-range objectives as follows:

> "1. MANAGEMENT of the range to assure proper use--thus preserving forage production potential, preventing watershed deterioration, and preserving wildlife habitat.
>
> "2. PROVIDING FORAGE under sound conservation practices, for the present and future recognized grazing demand so as to help keep the livestock industry stable, and maintain a healthy game population.
>
> "3. INCREASING forage production to help meet growing meat needs of the nation, to enhance recreational opportunities through more and better game habitat and related aesthetics, and to bolster local and regional economies. Increased forage production will be carried out where cost-benefit relationships are favorable."

The last sentence above - "Increased forage production will be carried out where cost-benefit relationships are favorable" - would seem to indicate that Mr. Rasmussen had one or both of the economic theories of marginal costs equaling marginal returns or of equi-marginal returns in mind. However, in a new Instruction Memorandum only five months later, No. 68-283 dated July 16, 1968, the Bureau restated its policy on range improvements to provide that:

> "1. There is no requirement for a significant cash contribution from range users as a condition for initiating multiple use range improvements and rehabilitation projects under a cooperative agreement. Parties that are in a disadvantaged financial position are not to be penalized.
>
> "2. Prior to any capital investment in a range improvement or rehabilitation project, investment by a range user cooperator should generally be channelled into improved livestock and grazing management with specifics included in the cooperative agreement, Section 4-Section 15 permit arrangements, or an Allotment Management Plan. In addition, maintenance support that is feasible should be a significant responsibility of the cooperator and specified in the authorization.

5/ Rasmussen, Boyd L. "Balancing the Uses of Public Rangeland," February 13, 1968, before ASRM, Albuquerque, New Mexico.

"3. It is preferred that multiple use projects such as seeding, brush removal, and fences which influence wildlife and livestock be developed through a cooperative agreement rather than Section 4 or 15 permits. This gives the Bureau a greater opportunity to exercise its management role in the future use of such projects and any subsequent modifications that may need to be made.

"4. It is preferred that range user development of range improvements under Sections 4 and 15 of the Taylor Grazing Act be limited to single use projects such as corrals, dipping vats, feed storage facilities, etc."

From this last statement it seems clear that while the Bureau of Land Management is cognizant of the existence of economically justifiable investment opportunities in range improvement and rehabilitation, it accepts no obligation either to push such investments itself to the point of marginal costs equaling marginal returns or specifically to provide for it through cooperative agreements with users. Users themselves are not required to undertake such investments. In fact, it appears as though the Bureau would prefer that there be no increase in forage production unless Bureau money paid for it. It seems as though they placed a greater importance on the avoidance of presumption of a property right being acquired by the user as a result of his investment in improvements, than they did on the need for improvements.

The fact that the Bureau memorandum quoted above does not obligate either the agency or the user or both cooperatively to make investments to the optimum level for forage production is not prima facie evidence that such investments are not made. The circumstances under which these types of investments are made, however, would lend strong support to the hypothesis that the Bureau itself would not be expected to make them to the extent justified by economic theory. This seems to be substantiated further by the fact that the Bureau in all of its discussions refers continuously to "the optimum sustained yield of forage." Sustained yield, of course, as pointed out near the beginning of this section, pertains to irreversible lands that respond to management. It does not refer to reversible lands that are capable of improvement through economically justified investment.

Undoubtedly all federal agencies are limited in the funds they have available for the purposes of investment. The Bureau has available for investment in range improvements from its own sources 25 percent of the fees collected under Section 15 of the Taylor Grazing Act 6/ and 33 percent of the Section 3 fees. 7/ This will be discussed in more detail below. However, it seems clear that there is no reason to believe that the amount of funds provided for investment purposes is equal to the marginal efficiency of capital applied to forage lands. This being the case, the situation is unlike that which would prevail under private ownership when the owner has access to credit which would enable him to expand this investment to the economic optimum. Thus the management of forage lands by the Bureau of Land Management is neither that of a landlord endeavoring to optimize his rentals over time, nor that of such agencies as the Bureau of Reclamation or the Corps of Engineers, which have a reasonable expectation of securing appropriations from Congress for reclamation and water power investments which show a favorable cost-benefit ratio.

Range improvement policy on U.S. Forest Service lands is not materially dissimilar from that discussed for the Bureau of Land Management. Range improvements are made with the objective to improve the lands to provide for the optimum sustained livestock use consistent with other resource uses, activities and values. In addition, range improvements are designed to contribute to the community stability and to good conservation practice. Management on a sustained yield basis in harmony with other uses and resource values is the rule.

Again, little criteria is established for user-government participation. Permittees are not encouraged to make investments in excess of expected returns to the ranch operation. A portion of the fees are made available for range improvements: 2 cents per animal month for sheep and goats and 10 cents per animal month for other kinds of livestock.

Compensation Policy for Loss of Investments

Before expanding on the extent of the investments made by the Government and by the rancher for range improvements, a few words concerning the incentives of investment by the rancher are in order. Rather than having an incentive, the user is restrained by strong economic consideration from making the economically justified investment himself. First of all, he is faced with several basic uncertainties. As will be seen in the following sections covering Allocative Justice and Stability, the two agencies managing most of the federal land have built a good deal of security into the tenure provisions of the permittees. However, there is still enough uncertainty as to how long the rancher will have control of the land for grazing that he is usually quite hesitant to invest any capital for other than ease of management and for those things that yield a quick return.

6/ See Legal Chapter II, p. II-4.
7/ See Legal Chapter II, p. II-23.

In recent years, while at the same time agreeing with the objectives of multiple use, the ranchers have seemed to be most concerned with the possibilities of reductions in privileges due to the emphasis on multiple use, withdrawals for higher use, and withdrawals for wildlife and single purpose use other than grazing. 8/ This uncertainty has made him quite hesitant to invest much capital for improvements.

This inherent uncertainty has not been allayed much by the U.S. Forest Service and the Bureau of Land Management in their policies of compensation for residual investments in improvements by the permittees when they lose control of the land. The U.S. Forest Service is not faced with the problem, as is the Bureau, of potential land disposal. Therefore, its policies for improvement of the land by the permittee are quite simple. The Government has the first responsibility to make improvements to the extent of funds available. Where government funds are not available, permittee's cooperation is accepted, but then only for improvements in which he will receive returns to his operation. Investment in range improvement by the permittee does not obligate the Government to reimburse the permittee for such investment if the grazing is reduced or discontinued. The permittee may keep title to structural improvements that are removable without damage to the resource. However, title remains with the Government if it participates in the cost of the structural improvement. Also, title to all non-structural and non-removable structural improvements remain with the Government.

The policies of the Bureau are covered in some detail in Section A of this chapter. Briefly they may be stated as follows:

1. When permits are transferred, the new permittee usually pays the transferee for his residual values in his capitalized improvements.

2. When land under permit is withdrawn, the withdrawal is conditioned upon payment by the applicant agency of fair and reasonable compensation of loss for the improvements; but only providing that the applicant agency is authorized by law to make such compensation.

There has been one statute applying to all agencies that provides for payment of remaining values in improvements (among other things) whenever the permitted land is lost for war or national defense purposes. 9/ A second act, the Navajo Indian Exchange Act of September 2, 1958, authorized similar compensation for range improvement investments caused by public land exchange. 10/

8/ See Eight County Questionnaire, Chapter III, Section D, and Ranch Interviews, Chapter III, Section E.

9/ Act of July 9, 1942; 56 Stat. 654, 43 U.S.C. § 315q.

10/ Navajo Indian Exchange Act of Sept. 2, 1958; 72 Stat. 1686.

From the above it can be seen that the permittee has only limited security in being compensated for his residual values in range improvements except in the event he loses the land due to war or national defense purposes. This limits incentive to invest in the improvement of the forage on the public land. Permittee investment on Bureau land is also in jeopardy of being lost because the investor is not assured that his animals will be allowed to graze on the increased forage. 11/

The user of the range is, therefore, in an anomalous position. He is not an owner, nor does he have all the contract rights and protection of a tenant as to the obligation of the landlord either to make the investments himself or to compensate him for investments that he, as a tenant, has made under contract with the landlord. It is questionable that the user could economically apply the optimum short-run inputs in the range land he uses, because the application of short-term inputs are frequently associated with long-term investments in a multiple relationship rather than an additive one. Since he does not have complete control over the long-term investments, his short-term capital inputs would also be limited.

The situation is made somewhat more harmful to the best principles of range conservation by the fact that range management policies of the U. S. Forest Service favor the small rancher. As will be demonstrated in the next section, the economies of scale of ranch management are such that unless the ranches are of an adequate size the operator cannot secure an adequate living for himself or for his family. Most ranchers faced with the choice of providing more for the immediate demands of his family or making long-term improvement of the range lands would undoubtedly choose in favor of the immediate needs of his family. Consequently, his contributions to the long-term improvement of the range would be limited.

Current Investment Levels and Range Conditions

Above are the theoretical hypotheses against which will be tested the evidence secured in this study. One very serious difficulty in securing empirical evidence to use in testing the above hypotheses is that range research has not kept pace with research centered around privately-owned crop land. Consequently, although a great deal is known about certain aspects of range management, there is a dearth of information on other features of it. This particularly applies to the economic concerns of rehabilitating range land, the quantity of land capable of such development and rehabilitation, and the cost of making the necessary investments in range development and rehabilitation. The following

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11/ For more on this subject see Section A of this Chapter, pp. IV 6-19.

analysis will, therefore, not provide proof nor disproof of the above hypotheses. It will merely present evidence as to the direction in which further steps may be taken.

No exact figures can be supplied for the levels of investment in the public range lands, although all direct investments are recorded. Much of the improvements in the range lands are of the nature of indirect or intangible investments. These include such activities as good management practices, deferment of grazing, and temporary reductions in numbers of animals grazing made by the Government for the rancher. Although items such as these do represent significant costs to the rancher in the form of temporary income deferred, they are not given a monetary value.

Data on investments are available from the U.S. Forest Service, the Bureau of Land Management, the Bureau of Reclamation and the Bureau of Sport Fisheries and Wildlife. Data are not available from the other agencies which have been mentioned in this analysis. However, they represent such a small percentage of the total that the figures available can be accepted as substantially complete. These investment data are divided between capital and maintenance by state, by Federal Government, and by private investors. These practices included seeding, plant control, fences, water development (wells, springs, reservoirs), soil stabilization practices, cattleguards, corrals, truck trails, and stock trails. These data are available for the years 1957, 1961, and 1966. Federal funds are derived from appropriations, revenue receipts, and shared receipts with private users. These data are shown in Table IV B-2 and Figures IV B-4 and IV B-5. More complete data than these may be found in Chapter III, Section B, and Chapter VII.

The following comments concerning these data are of interest:

1. Total capital expenditures increased from about $3.8 million in 1957 to $11.2 in 1966. Private capital expenditures have increased, but not at the same rate; they reached their highest percentage rate in 1961, but dropped back in 1966 to a percentage rate below that of 1957.

2. In the U.S. Forest Service, total capital investments increased from around $1.5 million to near $4.0 million in the 10-year period. However, even though the total dollar capital investment by the private sector increased some for each recorded year, the percentage investment decreased from around 22 percent to 17 percent.

3. In the Bureau of Land Management, total capital investments increased from $2.2 million in 1957 to $6.7 million in 1966. Total private investment increased from $0.4 million in 1957 to $1.8 million in 1961. However, this dropped again in 1966 to $0.58 million.

TABLE IV B-2

TOTAL CAPITAL AND MAINTENANCE EXPENDITURES FOR RANGE IMPROVEMENT ON PUBLIC LANDS - USFS, BLM, BR, BSFS
1957, 1961, 1966
($1,000)

	Total - Four Agencies											
	Capital				Maintenance				Total			
	Federal	Private	Total	% Private	Federal	Private	Total	% Private	Federal	Private	Total	% Private
1957												
11 Western States	2,937.7	636.6	3,574.2	17.8	449.5	274.3	723.9	37.9	3,387.2	910.9	4,298.1	21.2
Other States	123.1	83.6	212.9	39.3	57.8	50.1	108.0	46.4	180.9	139.9	320.8	43.6
United States	3,060.8	726.3	3,787.1	19.2	507.3	324.4	831.8	39.0	3,568.2	1,050.8	4,618.9	22.7
1961												
11 Western States	5,183.6	2,373.1	7,556.7	31.4	884.1	702.2	1,586.3	44.3	6,067.7	3,075.4	9,143.0	33.6
Other States	160.0	193.8	353.8	54.8	108.9	77.9	186.8	41.7	268.9	271.8	540.6	50.3
United States	5,343.5	2,567.0	7,910.5	32.4	993.0	780.2	1,773.2	44.0	6,336.5	3,347.1	9,683.6	34.6
1966												
11 Western States	9,377.9	1,173.3	10,551.2	11.1	774.3	662.8	1,437.0	46.1	10,152.2	1,836.0	11,988.2	15.3
Other States	506.4	137.1	643.5	21.3	120.9	147.7	268.6	55.0	627.2	284.8	912.1	31.2
United States	9,884.3	1,310.4	11,194.7	11.7	895.1	810.5	1,705.6	47.5	10,779.4	2,120.9	12,900.3	16.4

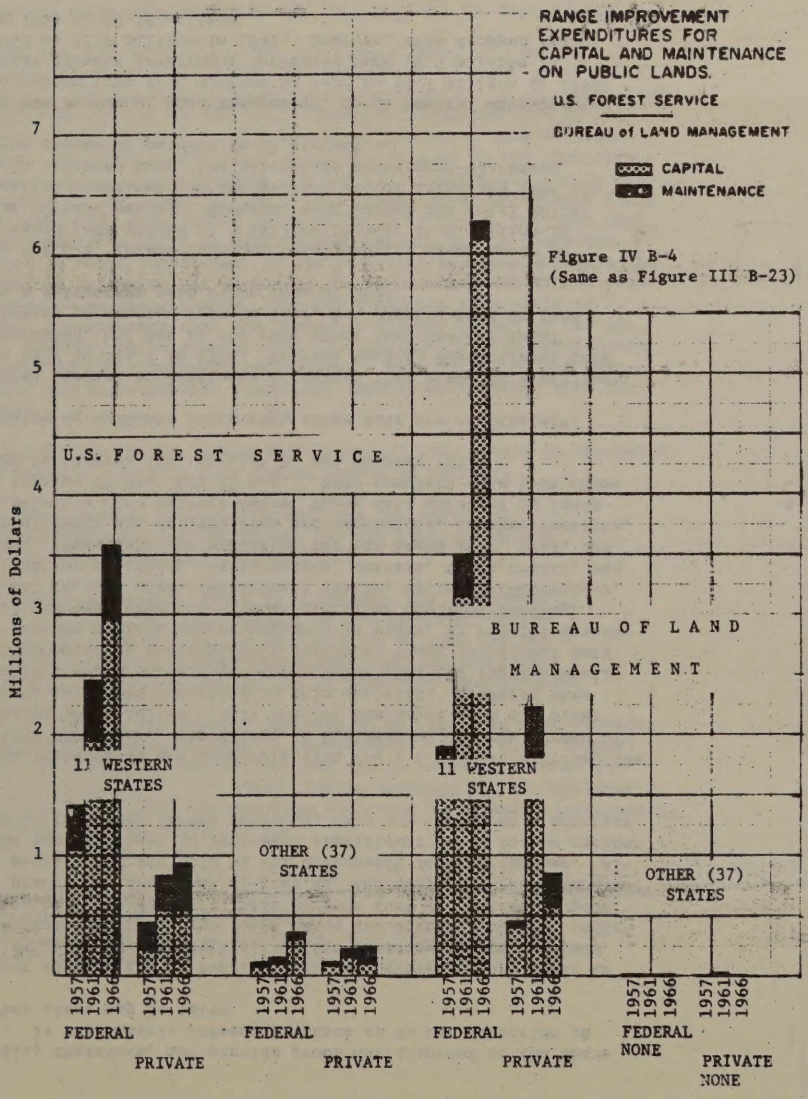

Figure IV B-4
(Same as Figure III B-23)

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2 of 3)

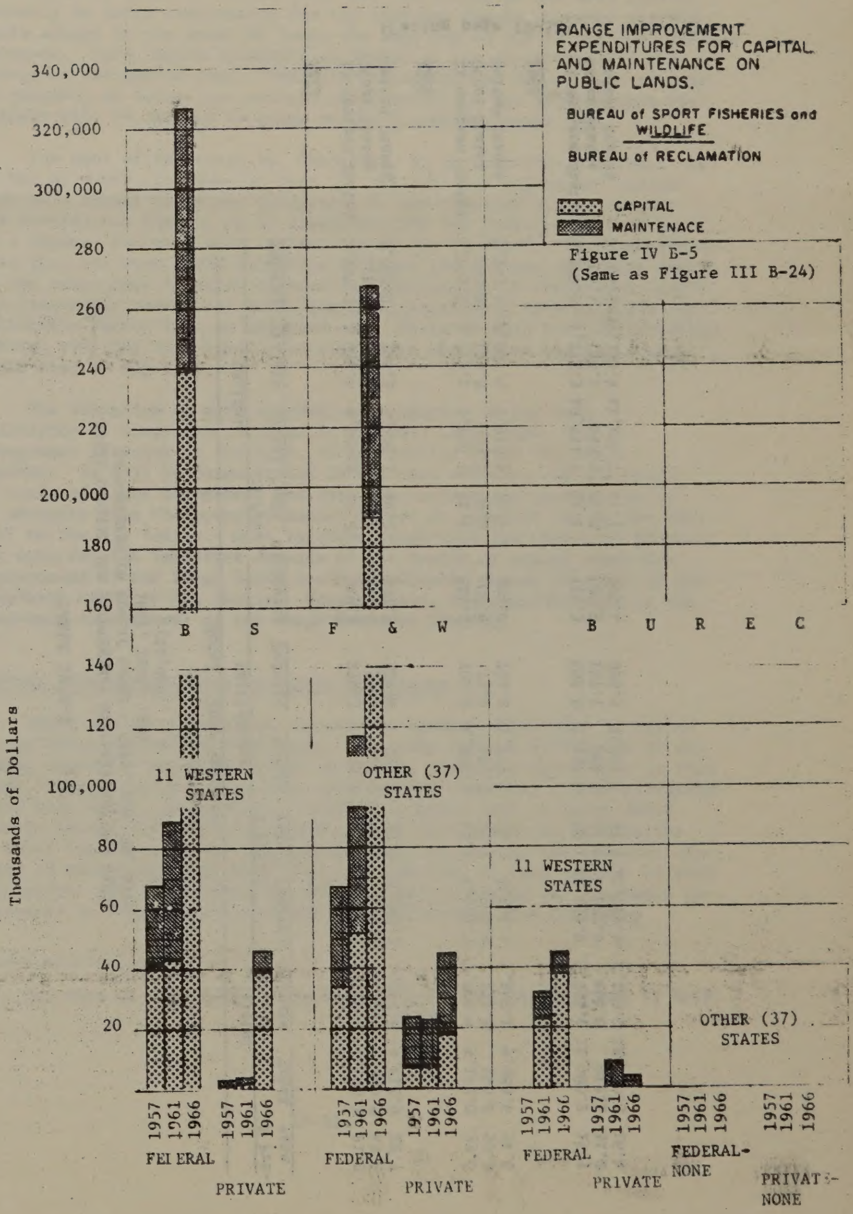

Figure IV B-5
(Same as Figure III B-24)

(Facing page IV-52)

The Government's capital investments, of course, do not all apply to improving the land for grazing. Just as some investments are primarily for grazing, others have little to do with grazing. Contrarywise, almost all of the rancher's investments are for the primary support of grazing, which in turn supports some of the multiple uses also. However, it does appear clear that the federal land agencies are following their objective of investing more and more capital in the land in order to improve its multiple use potential. Likewise, it also appears that the lack of increase in private expenditures reflects the policy of the major land agencies to undertake most of the capital investments themselves in order to prevent the permittee from gaining any feeling of a property right.

An analysis of the maintenance expenditures is also interesting. The total expenditures for maintenance have increased from around $0.8 million in 1957 to a somewhat level figure of something over $1.7 million in 1961 and 1966. However, this total figure reflects a steady and substantial increase by the U.S. Forest Service each period, while the Bureau of Land Management increased substantially in 1961 over 1957, but then dropped back again in 1966. The percentage of the maintenance expenditures by the private sector increased each period, going from around 39 percent in 1957 to over 47 percent in 1966. This increased percentage took place in both of the major land agencies, but was much more substantial in the Bureau of Land Management than in the U.S. Forest Service. On Bureau administered lands, almost two-thirds of the total maintenance expenditures in 1966 were by the ranchers.

The next question arises as to the adequacy of the investments in grazing lands at the level now employed. Tables IV B-1 , referred to earlier, plus IV B-3 , IV B-4 , and Figure IV B-6 show some of the statistics concerning grazing land that needs range improvement practices. Additional data may be found in Chapter III, Section A, and Chapter VII, These data show that the opportunity of increased investment is much greater than the present level of accomplishment.

In the United States the agencies control more land that would respond to investment than that which needs management only. In total, the seven agencies manage over 161,000,110 acres which could be improved if funds were made available for investment. Statistics vary, but Table IV B-3 shows that the effect on forage improvement through investment would be to increase the quantity of forage by 75 percent. Table III B-49 in Chapter III shows this anticipated increase to be about 90 percent. From this it would appear that investments at the present level are not providing the optimum returns from the range lands.

Further evidence on the degree of optimization of range improvements through investments may be gleaned from the users themselves. Seventy-five ranchers were interviewed in connection with the study and questions were asked them about the adequacy of range improvements on the range land used by them. A majority of the permittees were of the opinion that more improvements should be made jointly by the agency and the user. Of the investments already made in improvements they expected to recover practically all (97.5 percent), but they were hesitant about going ahead on investments themselves. Of the improvements already made which resulted in an increase in carrying capacity, the majority of ranchers stated that they were not given additional privileges to utilize the increased supply of forage resulting from the investments. 12/ As stated before, however, both the U.S. Forest Service and the Bureau of Land Management have the expressed policy of allocating increases in grazing capacity to those directly responsible for the increase.

The rancher interviews reflected the variations in situations confronting the ranchers. Where investments were limited to wells, reservoirs, corrals, etc., the ranchers had no fear of anyone else moving in on the increased capacity generated by improvements. In case of seeding, or management involving reduced grazing for a period, however, the ranchers did have fears that they would not regain the fruits of their efforts.

Land Classification, Priority of Use, Irreversibility and Preservation

Before leaving the subject of maintenance, development and preservation, some comments on the subjects of land classification, priority of use, and irreversibility of land as it relates to preservation are in order. As mentioned at the beginning of this section, the additional judgment variables associated with multiple use have complicated land policies for the federal land agencies. What is called for is a clear, rational means for making these judgments based on precisely recognized and understood facts, in accordance with explicit objectives to meet the fully understood needs of the nation, regions, community and family. However, to date no such clear, rational means have been devised.

In his report to the Public Land Law Review Commission dated March 29, 1968, and entitled "Public Land Management: Identification of Problems -- Analysis of Causes," Assistant Secretary Anderson of the Department of the Interior explored very well some of the problems concerning this. Among these were the following:

1. Range Improvements: Secretary Anderson covered the problems of range improvement, private equities in range improvements, and compensation for these equities in a manner quite similar to the discussion above.

12/ See Chapter III, Section E.

TABLE IV B-3
(same as TABLE III A-8)

GRAZING POTENTIAL OF THE PUBLIC LANDS POSSIBLE
WITH INTENSIVE IMPROVEMENT PRACTICES

Agency	AUM's Supplied in 1966	AUM's Possible with Improvement	Difference	Percent Increase
	(1,000 AUM's)			
USFS	7,989	14,598	6,609	83
BLM	13,275	22,918	9,643	73
NPS	35	62	27	77
BSFW	582	994	412	71
BR	458	762	304	66
BIA	216	269	53	24
DOD	79	93	14	17
TOTAL	22,634	39,696	17,062	75

TABLE IV B-4
(same as TABLE III A-5)

ACREAGE OF LAND GRAZED, ACREAGE SUITABLE FOR GRAZING AND THE PERCENT OF THE SUITABLE ACREAGE NEEDING AND SUSCEPTIBLE TO RANGE IMPROVEMENT PRACTICES BY STATE FOR THE PUBLIC LAND ADMINISTERED BY THE U.S. FOREST SERVICE AND THE BUREAU OF LAND MANAGEMENT
1966

	U. S. Forest Service			Bureau of Land Management		
State	Area Grazed	Acreage Suitable for Grazing	Percent Needing Range Improvement Practices	Area Grazed	Acreage Suitable for Grazing	Percent Needing Range Improvement Practices
	(1,000 Acres)			(1,000 Acres)		
Montana	7,670	2,740	79	7,790	7,950	49
Idaho	11,800	4,120	68	11,600	12,100	71
Wyoming	6,830	2,720	75	17,300	17,300	85
Colorado	12,400	5,370	80	7,800	7,780	78
New Mexico	8,350	4,890	92	13,500	13,600	90
Arizona	11,300	7,460	95	12,500	12,500	39
Utah	7,120	3,040	83	21,100	21,800	64
Nevada	4,860	1,870	81	43,200	44,400	82
Washington	4,440	1,160	90	233	285	62
Oregon	9,860	6,060	94	13,900	13,900	33
California	12,000	3,460	80	8,410	8,830	77
11 Western States	96,656	42,882	85	157,211	160,408	70
Other States	8,784	6,453	95	92	364	20
United States	105,439	49,335	86	157,303	160,772	70

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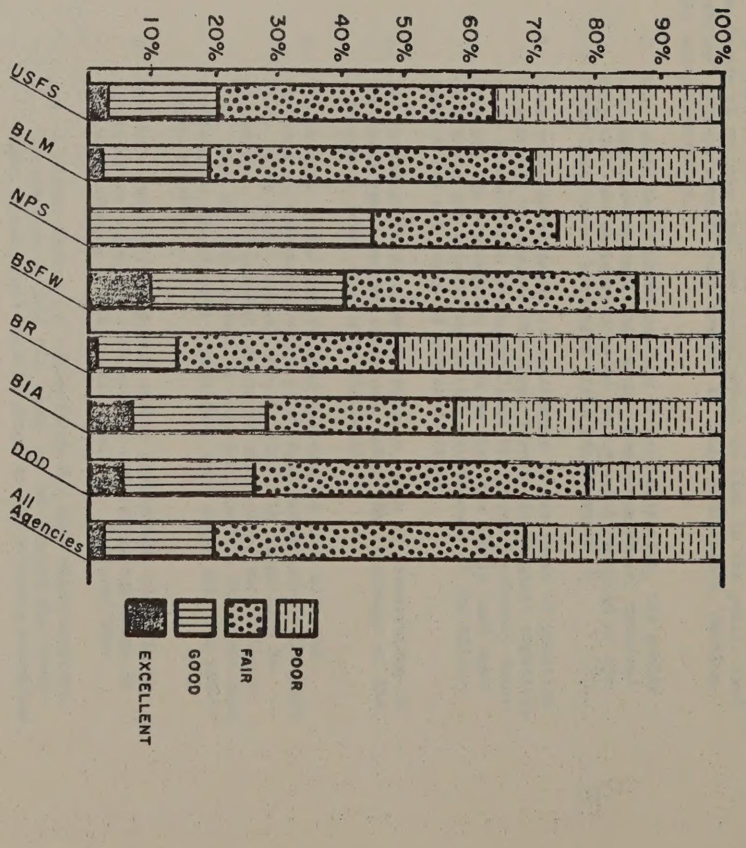

Figure IV B-6
(same as Figure III A-8)

Percentage of land in four range condition classes by agency for the Eleven Western States, 1966.

(Facing page IV-54)

2. Outdoor Recreation: Secretary Anderson described very well the Department's attitudes, plans and problems and emphasis placed on outdoor recreation. When read through the eyes of a stock rancher, it is not difficult to see why their fears seem to be growing concerning the possibility of conflict with this use.

3. Land Classification: Here Secretary Anderson notes that "Public land administrators do not have at their disposal a standardized and comprehensive system of land classification for all purposes. Most agencies face serious problems owing to lack of continuing and permanent authority for land classification."

4. Regional and Local Land Use Planning: The portion of this section covering "Demand" is particularly pertinent to this discussion. Here Secretary Anderson pointed out that there is no such thing as a single demand estimate, for a particular commodity, for a point in time somewhat in the future. He also notes that this presents a problem where the goods or services are not priced through a market system; and that "If demand data are to be used with any degree of accuracy in the planning for public lands, greater standardization of pricing assumptions will be required."

5. Multiple Use: This section is referred to particularly for its comments on the Problem of Definition. Here Secretary Anderson points out the different definitions, and separate understandings of the same definitions, that have grown out of the term "multiple use." He also points out that "the necessity for making hard choices remain. And the harder choices are becoming more frequent."

There is no need to go into this subject further in this analytical section. However, in the chapter on Alternatives, an alternative has been devised which it is hoped will improve the communications between all elements and levels of land users concerning land classification and priority of multiple use. This has been done because it seems obvious that the hard choices cannot be made without better facts and knowledge of needs. Whatever plan is devised to solve this, the planners might be well advised to modify the land classification base so that there is an opportunity to truly bring economic theory to bear on all lands. Until this is done, no one can truthfully claim that "where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good of the greatest number in the long run." 13/ Also, until this is done, no one will know for sure that capital is being spent to improve the land in a manner that will yield the greatest investment return.

13/ Secretary Wilson's letter to Gifford Pinchot in establishing the Forest Service in 1905. Dana, Forest and Range Policy, pp. 142-143.

An economic land classification might include some variation of the following:

1. A land class that responds to management but is economically irreversible. This land should be managed for sustained yield.

2. A land class that is reversible so that it can be managed with improvement inputs to yield optimum return according to the theory of marginal costs equaling marginal returns.

These classifications, of course, would need to be accompanied with enough physical, ecological and other scientific and economic data so that full system judgments could be made. These judgments would have to be based on considerable "response" information not now available, which could come only after considerable "system response" research.

Whatever system is established, especial concern should be given to irreversible decisions which have exclusionary aspects. Modern management techniques such as planning-programming-budgeting (PPB), operations research and similar tools make it possible to draw reasonable conclusions based on reasonable facts even though the system being analyzed is quite complex. However, there are some systems which are so exclusionary that an overriding judgment may be necessary. An example of this is wilderness areas and other land systems where the combination of uses affect both the quantity and the quality of the product. When dealing with a combination of compatible uses, judgment concerning marginal adjustments of inputs and outputs are required. However, for some non-compatible uses the decision can be an all-or-nothing one. Exclusionary demands are always sources of conflict. At times the right answer to the conflict is the most unsophisticated one. If the use is exclusionary and truly justified, the decision to keep it exclusionary may be easy. If the use is exclusionary and not truly justified, then the answer can be to proceed cautiously with some development which has a minimum effect on the exclusionary use, or more boldly as the political environment may dictate. However, if the exclusionary use is in between, i.e., it appears to be justified but may not be, then those making the judgment need to know two things. First, they need to know that there is no way to be just "a little bit developed," for ideally exclusionary resource uses. When the need is to be preserved, and the use is exclusionary, there is only one way to preserve it. This brings in the second point of required knowledge. On what basis was the exclusionary use defined as ideal? What is the real need for this use, at which point in time and for how many people? As Secretary Anderson says, this is a hard choice. Until a better means for classification of land is developed, and until the effort is made to fully inventory all the resource based needs of the country and to properly project these needs into the future, and finally, until a rational and acceptable manner is found to evaluate priority of use of the resource against the needs, the hard choice will be based on emotions as much as facts. Under these circumstances, until a better solution is found, the assumption probably will be that the use is exclusionary.

Summary

In summary, the following hypotheses may be established concerning the degree of success that one would expect to find in the public land agencies' accomplishments with respect to range maintenance, development and preservation.

1. When range maintenance was the primary objective, the public land agencies accomplished much. Range management required only that use be restricted to the carrying capacity of the range lands under sustained yield requirements.

2. When range development is considered in the sense of positive investments to improve the range beyond its original capacity, or to rehabilitate the range lands that have previously deteriorated, the presumption would be that the public land agencies would not measure up to the requirements of the efficiency model set forth by economic theory.

3. The introduction of other objectives, such as preservation of the small ranch and multiple use, makes the attainment of the development ideal even more difficult.

4. The ability of the public land agencies to cope with the problems of allocating range privileges among users, difficult as it is at best, is made more difficult by range land improvements. The present system of allocation, and reallocation, does not lend itself to easy decisions in the event that a permittee should grow a good deal more grass than his privileges provide.

5. Before a complete management and/or development plan can be prepared for a grazing land system, several deficiencies in the land planning process must be solved. Included are:

   (a) A better method for classifying the land which includes information so that the lands can be managed and developed, giving full consideration to all economic variables.

   (b) The development of more complete information concerning the economics of developing several types of grazing land systems. This calls for considerable research similar to that performed for general agriculture.

   (c) A factual means for itemizing not only the uses available from the land, but also how these uses match the national, regional and local needs. This includes the necessity for establishing rational "values" of some sort for both multiple uses and needs that can be weighed against each other.

6. Exclusionary uses must be treated with particular caution. If the use is truly exclusionary, and important values are attached to that use, then it must be recognized for what it is before any development is started.

Reference Material

Chapter IV - Section B
Maintenance, Development and Preservation of Public Forage Lands

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2. Cliff, Edward P. 1967. Grazing Policies on Forest Lands: A Look at the Next 20 Years. At 20th Annual Convention, American Society of Range Management. Seattle, Washington. Feb. 14, 1967.

3. Peffer, E. Louise. The Closing of the Public Domain. p. 4.

4. Nathan Associates, Inc., Robert R. Projection of the Consumption of Commodities Producible on the Public Lands of the United States - 1980-2000. Prepared for the Public Land Law Review Commission. Table 26, p. 83.

SECTION C

ALLOCATIVE JUSTICE AND FAIRNESS

Allocative Policies and Objectives

As pointed out in Section A, two concepts exist of the relationship of the Government to public lands. First, that of a landlord, administering the lands for public gain; and second, that of a custodian administering the lands to secure certain broad objectives. The Government as landlord normally would be expected to optimize its income through its agencies in such a manner as to secure the largest possible monetary returns for present and future generations. To the Government as custodian, income optimization is secondary to the attainment of other objectives, social as well as economic.

In general, the first concept has been held by the Department of Defense, the Bureau of Indian Affairs, and the Bureau of Reclamation. The second concept historically describes the activities of the U.S. Forest Service and the Bureau of Land Management, and these two agencies administer all but a very small percentage of the public grazing land.

The original permit system was established by the U.S. Forest Service in 1905. The Forest Service purposely chose to let social factors related to the range, small family ranches and local communities replace price (economic efficiency) as a means for resource allocations. Nearly 30 years later, Congress established the Taylor Grazing Act and set the grazing guidelines for most of the grazing land remaining without federal controls. These guidelines were quite similar to those of the U.S. Forest Service. Thus, the initial allocative procedures for nearly all grazing land in the country avoided the adoption of an economic efficiency criterion. An objective of allocation influenced by price could have been accomplished through some variation on competitive bids or through appraisal, with preference granted to prior users. However, it was believed that criteria other than price would produce a greater benefit for a greater number and thus result in the greatest public benefit.

The practical result of this to the permitted ranchers was that they obtained their public forage at a lower cost than those who did not have federal permits. Also, if the rules were such that they had the right to pass these permits on to those of their own choosing, then the difference in price between federal and private forage could be capitalized into a monetary value

Implications of the Initial Allocation Procedures to Justice and Fairness

In evaluating the degree of justice and fairness provided in the initial allocation of the range resources, the policies employed by the U.S. Forest Service and the Bureau of Land Management may be compared with the policies followed during those same periods with respect to resources in general. The policy to dispose of public resources to private individuals for their own use was generally motivated by the national purpose to develop the country as rapidly and completely as possible. Lands were given to railroad companies to subsidize the construction of lines, with no restraints placed upon the companies in exploiting the lands for their own profit. The Homestead Act of 1862 permitted private individuals to secure 160 acres of lands in fee simple merely by occupying and farming them for stated periods of time. Most of the western states permitted individuals to acquire water rights through proof of prior use. Rights to minerals and oil were granted through discovery. The Bureau of Reclamation continued to grant homesteads on land irrigated and developed by it.

The Enlarged Homestead Act of 1909 increased the amount of land that could be acquired by a homesteader from 160 acres to 320 acres to accommodate the needs of farmers for larger land holdings in regions where land was less productive. Even today Bureau of Land Management land can be homesteaded under the Desert Land Act when it is demonstrated that the land can be put to higher use than through grazing. Such a demonstration usually requires proof of the economic feasibility of irrigating the land.

The Forest Homestead Act of 1906 authorized the Secretary of Agriculture, through the Secretary of the Interior, to open for entry forest reserve lands chiefly valuable for agriculture, which were not needed for public purposes and which in his judgement might be occupied without injury to the forest. Between 1906 and 1915, 1,900,000 acres of forest reserve lands, sufficient for 18,000 settlers, were classified as open to entry. The overgenerous interpretation of the Forest Homestead Act led to its partial repeal in 1916. It was finally repealed in 1962. 1/

The policy of the Government in encouraging economic growth through private ownership of resources fell short in making provision for livestock grazing. Homesteads of 160 acres to 320 acres per family head were adequate for eastern family crop farms when farming utilized horses and mules exclusively. At no time, however, were farms of this size adequate for western family-sized livestock ranches. The organization of the livestock industry under the U.S. Forest Service and under the agencies set up to administer the Taylor Grazing Act attempted to extend to the western cattle and sheep industries the goals of social and economic stability towards which public policy was striving under the other land disposal acts. These goals included the preservation of the family unit (by the U.S. Forest Service only), the growth of the local community, and the stability of the livestock industry and of the local community. Other objectives included aid to Indians and assistance to established ranchers by permitting them to graze their horses, sheep, and cattle, and to have free use of the timber in the forest reserves for their ranch operations.

Other allocative criteria such as limitation of numbers and prevention of monopoly were set up by the U.S. Forest Service to prevent large itinerant ranchers from utilizing the public range to the exclusion of the small operator. The theory involved here was that the small family ranches would lend stability to the industry and to the local community and would build up the region. It was theorized that large operations would not do this; they would employ itinerant riders, would raise no families, and would spend only a small amount of the income earned in the local area.

The fact that, because economic efficiency (price) did not enter into the allocative procedure, the permittees were placed in a position where their privileges would acquire a capitalized permit value, presented no problem at that time. Even though there were many individuals who held no permits and thus did not secure such a windfall, there was little concern because all land use was supposed to generate a capital value for the user. This was the reward for the pain and privation of pioneering.

This acquisition of capital values would seem less justified today than several generations ago when the country was still in the process of development and all forms of resources were more abundant. However, even at present our agricultural programs generate capital values. Grain land with a wheat or feed grain base sells for more than comparable land without the same base. In 1957, a study of flue cured tobacco in Virginia and North Carolina showed that, depending upon conditions, an acre of allotment was worth up to $2,500. (2) Although many individuals decry this tendency, it nevertheless exists.

1/ 76 Stat. 1157, PL 87-689.

As mentioned earlier in Section A of this Chapter, most of the range land available for forage use in both the national forests and on the public range has been allocated. Therefore, it is only at infrequent occasions that new allocations of range privileges are made. In the future, the greatest activity for new allocations will probably be in the reallocation of privileges for use of increases in grazing capacity due to range improvement.

The U.S. Forest Service allocates all increases in grazing capacity resulting from revegetation or other range development work done at permittee's expense to the permittee making the investment. For other increases in grazing capacity, there are three priority allocations before temporary permits are available to new applicants. Bureau of Land Management procedures have the same built-in "stability" features. It seems quite apparent, therefore, that the opportunities for bringing in new permittees based on increased grazing capacity will be quite rare in the foreseeable future. That is, it will be rare as long as the current stability regulations prevail. In the analysis of permittees conducted in the eight counties surveyed (Chapter III, Section D), no cases were encountered of allocations of privileges to new permittees as a result of range improvements.

The initial allocative policies of the U.S. Forest Service and the Bureau of Land Management, and its predecessor, the Grazing Service, may be summarized as follows:

1. The agencies from the first considered their obligation to be as custodians rather than as landlords, and consequently placed social policy objectives above income maximization;

2. The social objectives of these agencies were consistent with the goals and objectives employed in the disposal policies of other federally owned resources;

3. The actual allocation practices of both agencies were developed to attain these same social objectives;

4. These practices resulted in the permitted ranchers getting their forage at a lower cost than those who did not have permits. Also, if they could control the transfer of these permits they would have an opportunity to build up a capitalized value in the permits;

5. The possible injustice and unfairness in treatment of individuals excluded from the largess granted to the permittees as a result of these social objectives is probably no more flagrant than in past and current examples of similar discrimination in government programs;

6. Finally, problems arising out of the initial allocations of grazing privileges are over for the most part. What is of concern now is how to proceed from here.

Allocation of Privileges Subsequent to the Initial Allotments

Once allocation of grazing privileges has been made, then the permittees' prime concern has to do with the renewal of the permits as long as they remain in the ranching business. When they decide to dispose of their businesses, then their concern has to do with the transfer regulations. Term permittees under both the U.S. Forest Service and the Bureau of Land Management are given a preference right of renewal by statute as long as the provisions and requirements under which they are issued continue to be met and as long as it is in the public interest to renew them. 2/ Temporary permits do not have the same protection by statute, but do have protection given by the stability objectives of both agencies. 3/ Consequently, the permittees have what comes close to permanent tenure on the grazing lands as long as they operate by the rules, and as long as the grazing resource remains available for livestock. The Eight County Questionnaire and the ranch interviews discussed in Sections D and E of Chapter III confirmed that there is little evidence that permittees have real concern over their ability to renew their permits or to remain on the land. Their concern rather is over the possibility of reductions in privileges, increased emphasis on multiple use, withdrawals for higher use, and especially withdrawals for wildlife and single purpose uses other than grazing.

The public concern at this point over security of tenure seems to be threefold:

1. Has security of tenure given the permittees reason to believe that they have acquired a property right in the public grazing lands?

2. Have actions by the federal land agencies contributed to this belief?

3. Have the forage allocation policies prevented an efficient reallocation of the range resources after the initial allocation?

2/ Source: See Legal Chapter II; for USFS see p. II-135; for BLM see p. II-31.

3/ Ibid.

Question No. 1 - Security of Tenure and Property Rights in Public Lands

Interviews with ranchers indicate that they believe that they have acquired a possessory interest in the public grazing lands. The survey of permittees 4/ in eight selected counties in the Eleven Western States revealed that 97.5 percent of all the permittees acquired their range privileges from other permittees and that only 2.5 percent were original holders of permits. Those acquiring their permits from relatives, a large proportion of which were acquired through inheritance, comprised 37.8 percent of the total. The largest proportion, however, acquired their permits through purchases from non-related individuals.

Since the major portion of the permittees acquired their permits in the open market, and presumably paid a market price for them, the idea of a possessory interest in the land is strong.

Question No. 2 - Action of Federal Agencies Contributing to Belief of Acquired Property Right

The second question involves the degree of the responsibility of government agencies for the assumption of a possessory interest by the ranchers. There seems to be little doubt on the part of the users of the range about the right of the agencies to withdraw land for a higher use, to decrease privileges in order to prevent further deterioration of the land, or to exercise supervisory control over range and conservation practices. This is not to say that the users are not exercised over such actions; in fact, they often make strong protests against them. However, there seems to be no questions in their minds about the rights of the Government in these areas. That the agencies may plan such constraints upon the user and that they have done so in the past is recognized.

Also, there seems to be little difficulty over the removal of leases of Department of Defense or Bureau of Reclamation lands where an individual secures his rights to use the land through competitive bids or through appraisal. A lessee who does not submit the highest rebid at the end of the lease period can expect to lose his privilege to graze the land. In this case the exercise of the right to refuse to renew the privilege and to transfer the privilege to another user has been reinforced by actions.

In two important respects, however, the Government has recognized some possessory interest of the permittee, or at least has acquiesced in practices which tend to create an impression that some interests do in fact exist. These examples lie in the policy of (A) permit transfers, and in the policy towards (B) compensation for loss of permits.

4/ See Chapter III, Section D, p. 96.

A. Transferability of Permits

Although the sale of privileges by permittees is not recognized in statutes nor in regulations, such sales have been going on for a long period of time. Much of the U.S. Forest Service and Bureau of Land Management grazing lands are now in the hands of individuals who paid the full market value for the privileges. The two agencies have always been aware of the sale of these privileges. Banks and other credit agencies regularly loan money on the purchase of such privileges at an average discount rate of about 50 percent of their value. Banks also accept the capitalized value of these permits as an asset on the rancher's financial statement.

Suprisingly enough, while these two land agencies have not recognized by expressed administrative sanction the sale of these privileges, probably no such recognition was necessary. The U.S. Forest Service has given indirect assent to the sales practice through permit waivers to the Farm Credit Administration. 5/ The memoranda of understanding covering this provides that when individuals apply for credit in order to purchase grazing privileges, the Farm Credit Administration notifies the public land agencies of the transaction and those agencies will permit no other transfer until the loan is paid. If, during the course of the loan, the U.S. Forest Service decides to put these lands to a higher use or to decrease the number of privileges, the credit agency will be notified and it will be given one year to adjust. The Bureau of Land Management follows somewhat similar procedures in the pledging of their term permits as security for a loan. 5/ Both agencies thus indirectly recognize the sale of privileges during a transfer and also their value for loan purposes. The agencies do specify that the extent of the loan in no way alters the agency's control over the land. Even so, some of the characteristics of a property right are embodied in the tenure and transfer procedures.

The reason for permitting the initial permittee to transfer his privileges to individuals of his own choosing was summed up in a letter by the Secretary of Agriculture on April 24, 1936, to the Senate of the United States in response to Senate Resolution No. 289: "A Report on the Western Range." The letter states:

> "In order to interfere as little as possible with legitimate business transactions, the permit of an established permittee is renewable to the purchaser of the dependent and otherwise qualified ranch property of an established patentee, or of permitted livestock, if the purchaser already owns properly qualified ranch property. Since a grazing preference is a privilege and not a right, it must be waived by the seller of the ranch or livestock to the Government which in turn renews it to the new purchaser. In the case of the death of an established user the permits may be renewed to the heirs.

5/ See Legal Chapter II, p. II-140, and p. II-35. Also see Resource Chapter III, p. III-108.

> Whenever the ranch is overstocked or there is a demand by other qualified users, the size of the permit to the purchaser or heir may be reduced prior to renewal." 6/

From the above analysis it is apparent that the desire of the agencies to provide security of tenure for the initial permittees caused them to feel that they had acquired some property right in the land they grazed. There is strong evidence to support the initial position taken by the agencies that security in tenure is necessary to accomplish the objectives of the preservation and improvement of the range, the stability of the livestock industry, and the stability of the local community. A serious question arises, however, over the policy of transfer of the range privileges. If, through security of tenure, the capitalized permit value is perpetuated, then the agencies would appear to be party to the recognition that the capitalized value of the permit is part of the "legitimate business transaction." Had the agencies originally insisted that no monetary value be attached to the privileges whenever they were waived and transferred through the agencies to the next permittees, the capital value of the permits would not have been secured by the initial users, their heirs, or any other ranchers in the transfer chain. Under these circumstances, the Government would have maintained flexibility in public land use which would have enabled it to vary its allocative objectives without harming the current users of the lands. However, this was not done. Not only did the agencies permit the transfer of lands by the initial permittees to whomever they designated, provided the designated transferees met the commensurability and other social and economic requirements enforced by the agencies, but they tacitly recognized the right of the land users also to convey a capital value at the time of the transfer. This would seem to have placed a constraint on the agencies in their ability to change their policy objectives with respect to the allocation and use of the range lands.

B. Compensation for Loss of Permits

The U.S. Forest Service and the Bureau of Land Management have consistently maintained that the grazing of livestock on lands under their administrations was a privilege and not a right. 7/

The courts have consistently upheld the agencies in their viewpoint, but at the same time have ruled that the permits are "something of value to the possessors and something which have their source in an enactment of Congress ...."8/ A summary of this might

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6/ U.S. Department of Agriculture, U.S. Forest Service. 1936. The Western Range, 74 Congress, 2nd Session, Senate Document 199, p. 268.

7/ For a more complete history of this see Legal Chapter II, Section D, p. II-185, "Nature of the 'Grazing Privilege.'"

8/ Ibid.

be that those having permits do acquire "rights," but these rights have not all been defined by category. Whatever these rights are, the permittee does not have the right to retain his grazing privileges as against the United States when the Government has duly exercised its sound discretion to transfer or exchange the public lands. 9/

Within this framework, an analysis can be made to determine what the Federal Government has and has not done to compensate permittees for the loss of their "rights." An outline of the history of the policies of Congress and the several land agencies for compensating grazing permittees for their grazing losses are found in Section A of this chapter beginning on page IV-8.

There are two key legislative acts which set some precedent for having the Federal Government compensate permittees for the capitalized value of their permits. The first of these is the Act of July 9, 1942, (56 Stat. 654; 43 U.S.C. 315q), as amended, in which the grazing permittees "shall be paid" for the losses suffered as a result of use of such lands for war or national defense purposes. This payment is directed to be made by the agency or department so using the lands.

During 1955 the Department of Defense compensated users of the public lands when the McGregor Range in New Mexico was withdrawn from grazing. The U.S. Army Corps of Engineers acquired this. It consisted of approximately 71,000 acres of deeded land and 626,000 acres of federal and state land. It was made up of a group of individual ranches, mostly water based, that depended largely on the federal lands to make them economic units. The lands were grazed the year round.

The Corps of Engineers appraised the several ranches as integral units, including deeded, state and federal lands. 10/ Fair market values were established for these individual ranches, and then the non-federal land was purchased. The statute above was utilized to compensate permittees for the fair market values mentioned, and these fair market values included the capitalized permit values as part of their totals. It has been reported also that the Corps of Engineers compensated permittees for fair values, including the capitalized permit value, in a number of cases during World War II. 11/

9/ Ibid.

10/ Telephone conversation with Mr. V.P. Szuszitzki, Corps of Engineers, Albuquerque, New Mexico, April 16 and 17, 1969.

11/ Note from Dr. Arthur D. Smith, PLLRC, regarding discussions of his with the Department of Defense.

The second act is the Navajo Indians Exchange Act of September 2, 1958. 12/ This Act provides that: "... owners of range improvements of a permanent nature placed ... on lands transferred ... shall be compensated for the reasonable value of such improvements ..." Precedent in the same Act was set when it was specifically required that the Bureau of Reclamation compensate the Indians for the loss of the use of their lands in accordance with the same standards expressed in 43 U.S.C. 315q above. As for the above, these compensations were to be a fair and reasonable amount. It is not known how this fair and reasonable amount was calculated. However, most government appraisal methods give due considerations to values of adjacent private property having similar characteristics and locations, to detailed book values, and to all similar sources of information which will yield insights to real market values. Assuming that this was done in this case, and assuming that the Bureau of Indian Affairs was its usual assiduous self in assisting the Indians to obtain maximum values, it would be most unusual if the full capitalized value of the permits was not included in the compensation. However, a personal investigation of the original records, plus personal interviews with those originally involved, should be accomplished before citing this as a positive example.

The examples above of compensation for loss of grazing privileges are not extensive. Also, except for residual values in grazing land improvements, compensation has been granted only as a result of the use of such lands for war or national defense purposes. There is at least one positive example where the Government has paid permittees for the capitalized value that has accumulated over the years in their permits. There are some others where the Government probably has paid. No doubt this can be determined one way or another by additional research. In any event, it is important only in that it is one point in a subject that has grown large over the years, while all interested parties have watched the problem grow without taking steps to solve it.

Summarizing this portion, even though the U.S. Forest Service and the Bureau of Land Management have consistently maintained that grazing livestock on their lands is a privilege and not a right, some undefined "rights" of some sort are associated with the grazing privilege. In a very few instances, these "rights" have been recognized, although perhaps indirectly, through the Government's paying for capitalized permit values when privileges have been lost because of conditions associated with war

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12/ 72 Stat. 1686.

and national defense. In any event, the custom of permittees selling permit values to each other has been not only common but also open and above board for many years. The two large land management agencies have known of these practices and have participated in discussions concerning them during all these years. Because of this, it appears, as with the policy of permit transfers, the position of the U.S. Forest Service and the Bureau of Land Management has helped to create an impression that some possessory rights do in fact exist.

Question No. 3 - Economic Efficiency and Forage Reallocation Policies

What has been the effect upon the efficient allocation of resources of the forage reallocation policies? As pointed out above, under the government programs, economic efficiency (price) was not a criterion in forage allocation to the first permittees, although the criteria applied did not necessarily exclude considerations of efficiency. Once the allocations were made, however, the policies of security in tenure and of transfer of privileges tended to permit the market price to reallocate the resources after they passed from the hands of the first users. There are exceptions which will be considered later. At this time the process by which the free market would tend to allocate resources in the absence of effective constraints will be examined.

In a competitive economic situation, market prices perform two basic functions: (1) they determined how resources will be allocated; and (2) they distribute the income to be derived from the resources to the factors of production involved.

Price as an allocative factor has distinct advantages over various non-economic criteria in resource allocation. Price tends to allocate the property to the most efficient operator. This is of primary importance in agriculture in general and in the livestock industry in particular where economies of scale exist. Section C of Chapter III in this study analyzes the ranches covered by the Western Regional Research Project (W-79). In this analysis, special attention was paid to the factor of scale. It was discovered that the economies of size followed a hyperbolic trend; i.e., as the number of animal units on a ranch increased, costs declined, but at a decreasing rate, and approached an asymptote. In order to avoid some intercorrelations which become apparent between the three factors of hired labor per animal unit (x_5), the number of animal units (x_4), and investment in machinery per animal unit (x_3) in Equation 1, the principal analytical model developed for the multiple correlation analysis, Equation 2, was devised. In Equation 2, labor and equipment items were dropped from the equation and the economies of scale function were represented in the estimating equation by the number of animal units alone. The coefficient of multiple determination was somewhat less in Equation 2 than it was in Equation 1 (R^2 = .4553 compared with .5548). However, the significance of the partial regression coefficient values (b_3) relating to size (x_4) was enough better, that Equation 2 was used for all analyses relating to scale. Tables IV C-5 and IV C-6 show the full Equation 2 with the partial regression derived "b" values on C-5 and the mean and standard deviation values of the "x's" on C-6. Also shown on C-5 are the degree of significance levels of the values for b_1: (federal range use), and b_3: ranch size. It may be seen that the latter values are significant to the 1 percent level for all ranch types in all areas, combined and otherwise, except for the three cow-yearling operations (Type II) in areas I, II and III. For a complete dissertation on the multiple correlation analysis refer to Chapter III, Section C, beginning on page III-75.

Because of the existence of pronounced economies of scale, the value of range land and consequently of the grazing privileges varies with the size of the operation. Referring to Figure IV C-7, the combined area curve, I-IV, shows the average adjusted cost of beef to be the following:

Ranch Size - AU's	Average Adjusted Beef Cost, $/cwt.
100 AU's	$ 31.78/cwt.
200	25.01
300	22.75
400	21.62
1000	19.59

From the above data it is apparent that size of operations is very significant to the unit cost of production and efficiency in producing meat. Of perhaps even greater significance, however, is the effect of scale upon the incremental value of land to the ranchers. A small rancher, for example, who has 200 animal units, has a cost of $25.01 for producing 100 pounds of meat. His long run expectation of the average price he will receive for 100 pounds of beef is, say, $28.00. If each animal unit produces 3.0 hundredweight of meat, the 200 animal units will produce 600 hundredweight of meat, from which the rancher will receive a net profit of $1,794, plus wages for his own and his family's labor.

If he increases the size of his operation to 400 animal units, his average adjusted cost per hundredweight of meat produced will decline to $21.62 per hundredweight. At the selling price of $28.00 per hundredweight he will now have net profits of $6.38 per hundredweight, or $7,656 on 400 animal units. The extra 200 animal units added to his ranch will net him $5,862. This is $29.31 per animal unit added to his operation, or $2.50 approximately per animal unit month (AUM).

Another individual who has no ranch property and wishes to buy the same ranch of 200 animal units, also wanted by the rancher above, would find his costs of operation $25.01 per hundredweight, the same as for the rancher above before he added the additional 200 animal

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TABLE IV C-5

(same as TABLE III C-64)

PARTIAL REGRESSION b-VALUES FOR CATTLE RANCHES IN THE
WESTERN REGION, BY AREA, COMBINING TYPES
EQUATION 2

$$Y = a + b_1X_1 + b_2X_2 + b_3\ 1/X_4 + b_4X_6 + b_5X_6^2$$

Area	Type	N	R^2	Standard Error	a	b_1			b_2	b_3	b_4	b_5
						Value	t	Sig. Lev. %				
Areas I, II, III, IV		334	.4553	8.284	18.63	- .2170 *	-2.240	2.5	.1712 *	1355.6 **	.1704	- .00219
I	1 & 2	90	.3507	6.567	8.64	- .6931 *	-2.001	4.5	.0428	1645.9 **	.3741	- .00318 *
I	1	66	.5110	5.555	93.31	- .6160			.1338	1330.6 **	- 1.7430 *	.00995 *
I	2	24	.1848	8.621	3.68	- .2294			- .2868	2036.1	.4428	- .00326
II	1 & 2	80	.2810	5.320	40.82	- .7789 **	-3.014	0.3	.1912	716.4 **	- .4615	.00268
II	1	54	.2773	5.807	52.94	- 1.0024 *			.2362	643.0 **	- .7786	.00482
II	2	26	.3537	4.080	-45.69	- .5748			- .0558	926.6	1.8512	- .01257
III	1 & 2	87	.5249	12.052	16.34	- .1658	-0.955	33.7	.2368	1417.2 **	.3192	- .00403
III	1	76	.5421	12.347	15.20	- .1437			.1946	1418.9 **	.3955	- .00475
III	2	11	.5968	8.344	154.05	- 3.5887			1.2268 *	2916.2	- 4.2139	.03055
IV	1 & 2	77	.4569	7.049	22.37	- .3354			.3078	1704.5 **	.0502	- .00136
IV	1	47	.4212	8.095	9.59	- .3343	-1.245	21.3	.3129	1497.2 **	.5578	- .00523
IV	2	30	.7124	3.819	39.21	- 1.2031 **			.2976 *	1060.9 **	- .5903	.00398

* Significant at the 5% level
** Significant at the 1% level.

Type I Cow-calf Ranches
Type II Cow-yearling Ranches

Area I The Great Plains Area: Eastern Montana, eastern Wyoming and eastern Colorado
Area II The Rocky Mountain Area: Idaho, western Wyoming and western Colorado
Area III The Southern Desert Area: Arizona, New Mexico and southern Nevada
Area IV The Intermountain Area: Eastern Oregon, northern Nevada.

TABLE IV C-6

(same as TABLE III C-65)

MEANS AND STANDARD DEVIATIONS FOR CATTLE RANCHES IN THE WESTERN REGION, BY AREA, COMBINING TYPES
EQUATION 2

$$Y = a + b_1X_1 + b_2X_2 + b_3\ {}^{1}/X_4 + b_4X_6 + b_5X_6^2$$

Area	Type	N	R^2	a (constant)		X_1	X_2	$1/X_4$	X_6	X_6^2	Y
Areas I, II, III, IV	1 & 2	334	.4553	18.63	Mean	3.303	5.960	.00487	79.22	6483.1	24.86
					Std. Dev.	4.836	6.526	.00526	14.44	2038.3	11.14
I	1 & 2	90	.3507	8.64	Mean	1.179	8.331	.00421	81.91	6938.5	23.79
					Std. Dev.	2.031	7.836	.00264	14.19	1881.7	7.917
I	1	66	.5110	93.31	Mean	1.004	8.517	.00448	84.33	7215.1	24.57
					Std. Dev.	1.918	8.553	.00271	10.23	1592.2	7.633
I	2	24	.1848	3.68	Mean	1.662	7.821	.00346	75.25	6065.2	21.64
					Std. Dev.	2.289	5.522	.00234	20.50	2350.6	8.447
II	1 & 2	80	.2810	40.82	Mean	2.521	4.017	.00379	84.16	7185.3	22.72
					Std. Dev.	2.356	4.115	.00312	10.16	1609.6	6.072
II	1	54	.2773	52.94	Mean	2.268	3.904	.00455	85.48	7412.2	23.70
					Std. Dev.	2.011	4.242	.00337	10.35	1631.8	6.501
II	2	26	.3537	-45.69	Mean	3.048	4.251	.00222	81.42	6723.9	20.70
					Std. Dev.	2.923	3.908	.00171	9.36	1483.0	4.539
III	1 & 2	87	.5249	16.34	Mean	6.126	7.031	.00752	73.34	5623.0	28.39
					Std. Dev.	7.724	6.710	.00852	15.69	2159.0	16.97
III	1	76	.5421	15.20	Mean	6.296	7.285	.00818	73.95	5719.0	29.39
					Std. Dev.	8.137	7.005	.00889	15.94	2191.7	17.628
III	2	11	.5968	164.05	Mean	4.947	5.276	.00301	69.18	4959.7	21.52
					Std. Dev.	3.831	3.924	.00248	13.82	1872.6	9.292
IV	1 & 2	77	.4569	22.37	Mean	3.408	4.000	.00378	77.56	6228.1	24.34
					Std. Dev.	3.039	5.505	.00313	14.68	2108.2	9.245
IV	1	47	.4212	9.59	Mean	3.663	4.393	.00432	77.49	6270.6	26.64
					Std. Dev.	3.499	5.391	.00354	16.49	2336.2	10.045
IV	2	30	.7124	39.21	Mean	3.006	3.383	.00293	77.67	6161.5	20.74
					Std. Dev.	2.124	5.715	.00213	11.58	1726.9	6.478

Area I The Great Plains Area: Eastern Montana, eastern Wyoming and eastern Colorado
Area II The Rocky Mountain Area: Idaho, western Wyoming and western Colorado
Area III The Southern Desert Area: Arizona, New Mexico and southern Nevada
Area IV The Intermountain Area: Eastern Oregon, northern Nevada

Type 1 Cow-calf Ranches
Type 2 Cow-yearling Ranches

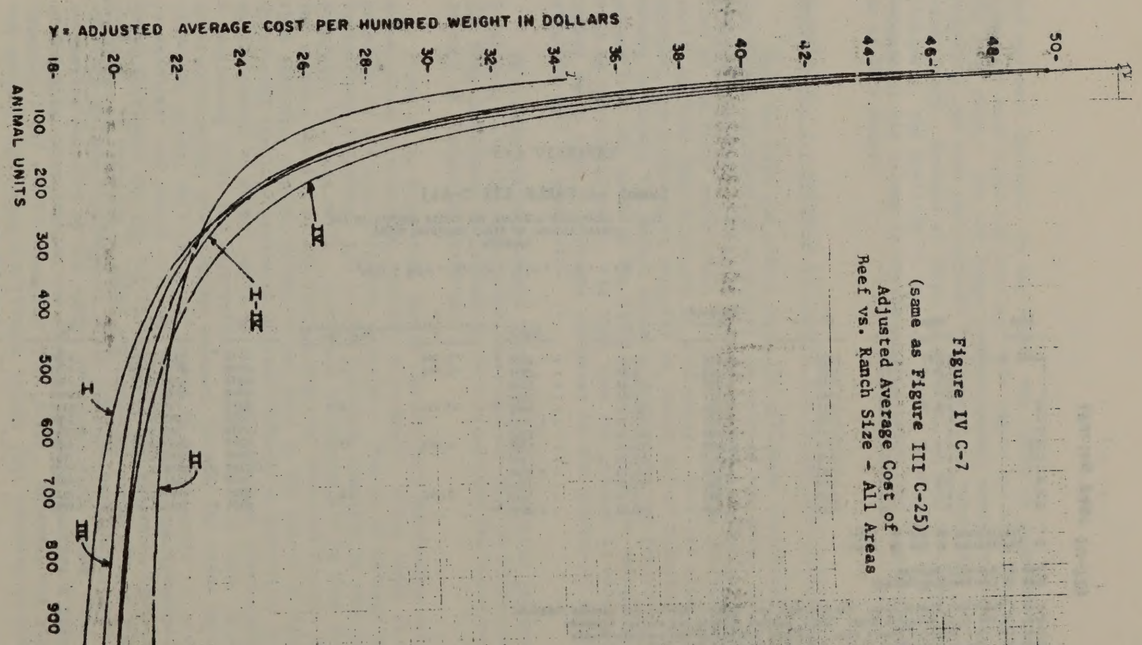

Figure IV C-7

(same as Figure III C-25)

Adjusted Average Cost of Beef vs. Ranch Size - All Areas

COMBINED AREAS I, II, III & IV

Individual Areas I, II, III, IV, all with combined types 1 and 2 units. Thus, ranch operation would yield him only $1,794 in net profit, or $8.97 per animal unit of range land purchased. Converted to AUM's, the second bidder for the land would have a profit of only 75 cents per AUM. Therefore, if economic factors were the only consideration, this second rancher could not compete with the rancher already in business in the purchase of a new ranch which came up for sale. This may be illustrated graphically.

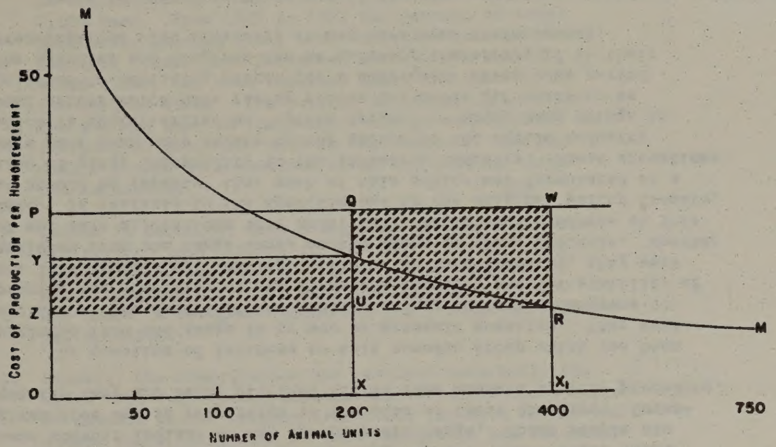

Figure IV C-8

In Figure IV C-8 above, the costs of operations by scale are represented by the curve MM; the selling price of beef by OP. If a rancher starts with an operation of 200 units, his costs are OY and his profits are YPQT. If he expands the size of his operation from X by adding XX_1 animal units, his costs per unit will decrease to OZ and his profits will increase by the shaded area ZYTQWR. Thus, any individual wishing to purchase XX_1 animal units who has no operation to which to add would be at a disadvantage to one adding these units to an existing operation.

If property, or in this case grazing permits, were allocated on the basis of competive bidding, the tendency would be for ranchers to bid to increase their operations to the most efficient units. Ranch sizes, like sizes of farms generally in the United States, would probably increase to over twice their present size. The smaller operations would be absorbed into larger units and the cost per unit of meat produced would tend to decline. However, the policy of the Bureau of Land Management and the U.S. Forest Service has been to allocate the land more in accordance with social criteria than economic efficiency.

Present System of Allocation and Income Distribution

It is shown in the discussion above that the allocative procedures of the two major public land agencies allowed the original permittees an economic advantage over other ranchers who were not permitted to receive privileges to graze on public land. Also, because of the transfer regulations of the two agencies, the original permittees have been allowed to build up a capitalized value in their permits which they sell or pass on to the next users. The allocative justice between those who now possess the range permits and those who do not should be considered at this time.

The nomadic or itinerant sheepmen or cattlemen who grazed their flocks or herds on government lands, who owned no property and had no headquarters, are gone for the most part. They have made their adjustments to exclusion from the range lands. There still exist some nomadic Indians on the Southwestern range. These people are given free use in proportion to the size of their families. Consequently they are being provided for in some measure by this procedure.

The question of fairness to this nomadic group which has been excluded from the range is by now an academic question. They were victims of the desire of the public land agencies and Congress to provide for stability of the livestock industry and for stability of the local community. Having little or no base property, they were excluded from the range lands on the basis of these criteria. Whether or not fair allocations were made, it is fruitless to debate at this date. In fairness to the agencies and to the original policy framers, it should be repeated that much of this policy was formulated at a time of great instability in the livestock industry. These situations were made even more severe by the nature of the cattle industry which is characterized by "cattle cycles" -- those long swings in beef prices which have rising prices for about six years to be followed by declining prices for a subsequent seven year period. The agencies and Congress can be excused, therefore, if in their preoccupation with stability it may have been overstressed.

There is one other group whose interests should be considered. It is comprised of the ranchers typified in the example above who do not have grazing permits, who owned land but could not meet all the requirements of commensurability, and who up to this point have not been provided with permits. Much of the economic disadvantage faced by these ranchers has disappeared with time. That is because only a few of the original permittees are still in business. Most have sold their ranches, or willed them to relatives who sold them. Reference once more to Table III D-70, facing page III-92 in Section D of Chapter III (Eight County Study), indicates that nearly 60 percent of the permitted ranchers purchased their permits from non-related people, and nearly 38 percent acquired their permits from relatives. Only 2.5 percent of the original permittees were still operating their ranches. All those who purchased their permits from non-relatives presumably paid for the capitalized value of the permits at the time of purchase. To the extent that these capitalized values have been paid for, the latest ranch owners have no economic advantage over the others. If it can be assumed, as the U.S. Forest Service says, that an average of 50 percent of the capitalized values have been paid for by the average rancher, then the advantage originally held by the early permittees has been reduced by at least half. (3) This subject will be discussed further in Stability, Section D. In any event, some of this problem still exists; and it is of particular significance in cases where land has become either rehabilitated or improved, and where the carrying capacity of the range land has increased.

As discussed earlier in this section, the stability features of the allocative procedures for both the U.S. Forest Service and the Bureau of Land Management have created circumstances where it will be most difficult to bring in new permittees. At least it will be difficult until there is a very substantial rehabilitation and improvement of the public range. It should be pointed out also that, if and when it is possible to bring in new permittees, this practice would tend to continue to encourage ranch units which are too small to earn an adequate income for their owners. For the most part it would add to the number of public range men who are below the level of economic efficiency.

Small Ranches

If efficient allocation of resources were the only criterion of justice in allocation of range resources, discrimination in favor of the small rancher would not be justified. However, as pointed out in several places in this chapter, one of the most important objectives of the U.S. Forest Service continues to be the stability of the family ranching unit. The trends in the distribution of grazing permits in relation to the permit size of the ranch operations can be analyzed from Tables IV C-7 for the U.S. Forest Service and IV C-8 for the Bureau of Land Management. These trends may be stated briefly as follows:

1. Cattle on the national forest are divided into classes of 1-40 head; 41-100 head; 101-200 head; and over 200 head. From 1909 to 1965 the percent of total permittees grazing cattle on the national forest have declined slightly in the smallest class. This decline has been

about evenly distributed among the other three size classes. The percent of animals grazed has also gone down some in both the smallest and largest classes, with the 101-200 head ranches absorbing most of the animals. The average size of the permit is about the same in all classes except for the over 200-head ranches which have gone down considerably in numbers of permitted cattle.

2. Sheep on the national forest are divided into classes of 1-1,000 head; 1,001-2,500; 2,501-4,000; and over 4,000 head. From 1909 to 1965 the percent of total permittees grazing sheep have increased some in the smallest class, have decreased some in the second-sized class, and have remained about the same in the two largest sizes. The percent of animals grazed and the average size of the permits are up considerably in the smaller group and down in the largest. The two middle groups have remained about the same in these two categories.

3. Cattle on Bureau of Land Management grazing districts are divided into classes of 1-50 head; 51-100 head; 101-200 head; and over 200 head. Cattle records by size class are available only for the years of 1950 and 1960. A review of these two years shows all classes quite similar.

4. Overall, the distribution has remained remarkably the same. The U.S. Forest Service has decreased the numbers of animals in the largest size class for both cattle and sheep, while the Bureau of Land Management has increased the largest size class for cattle somewhat.

5. The analyses above cover federal permits only. To all these ranches must be added the animals grazed on private land only. This, of course, makes all the ranches somewhat larger in numbers of total animals than those shown using federal range. However, it does seem obvious that the great majority of cattle ranch permittees graze less than 200 animals each. It also seems clear that much more than half of the total cattle grazed are on ranches having over 200 head each.

For those who would like to review the U.S. Forest Service permit size distribution and number of permitted animals by state, additional Tables are III A-17, A-18, A-19 and A-20 in Chapter III, Section A, facing page III-34.

The use of the 200 figure division point between the largest permitted ranches and the three smaller sizes seems to be somewhat prophetic. This is because a 200 animal unit cattle ranch is around the

TABLE IV C-7

(same as TABLE III A-16)

DISTRIBUTION OF GRAZING PERMITS ON THE NATIONAL FORESTS ACCORDING TO SIZE CLASSES, 1909-65 c/

CATTLE a/

Year	Class I (1-40 head)			Class II (41-100 head)			Class III (101-200 head)			Class IV (over 200 head)			Average size of permits of all grades
	Number of permittees	Number grazed	Average size of permit	Number of permittees	Number grazed	Average size of permit	Number of permittees	Number grazed	Average size of permit	Number of permittees	Number grazed	Average size of permit	
	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Number
1909	64	15	16	20	19	68	9	18	149	7	48	501	72
1914	66	15	16	19	18	67	8	18	145	7	49	484	68
1919	65	16	17	20	20	67	8	17	146	7	47	497	69
1924	64	15	17	20	20	67	9	18	144	7	47	476	69
1929	64	15	16	20	18	66	9	20	144	7	47	445	70
1934	62	15	17	21	20	66	10	21	146	7	44	425	69
1960	56	12	17	23	21	68	12	24	145	8	43	383	75
1965	55	11	16	23	20	68	13	24	150	9	45	332	79

SHEEP b/

Year	Class I (1-1,000 head)			Class II (1,001-2,500 head)			Class III (2,501-4,000 head)			Class IV (over 4,000 head)			Average size of permits of all grades
	Number of permittees	Number grazed	Average size of permit	Number of permittees	Number grazed	Average size of permit	Number of permittees	Number grazed	Average size of permit	Number of permittees	Number grazed	Average size of permit	
	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Number
1909	48	13	422	38	39	1,596	8	17	3,160	6	31	7,386	1,541
1914	47	13	416	39	42	1,550	8	16	3,102	6	29	7,005	1,469
1919	57	18	381	32	41	1,529	6	15	3,204	5	26	6,667	1,207
1924	61	19	356	29	38	1,534	6	16	3,222	4	27	6,783	1,159
1929	64	22	359	27	40	1,508	5	15	3,120	4	23	6,690	1,042
1934	62	21	368	29	42	1,528	5	14	3,178	4	23	6,647	1,071
1960	58	24	535	30	38	1,604	8	20	3,098	4	18	5,606	1,274
1965	57	23	529	30	37	1,618	9	21	3,126	5	19	5,336	1,304

a/ Includes a relatively small number of horses and a few swine, not segregated.
b/ Includes a relatively small number of goats, not segregated from sheep.
c/ Source: Values from 1909 to 1934 were taken from: U.S. Department of Agriculture, Forest Service. 1936. The western range. Senate Document 199. 74th Congress, 2d sess. (620 pages) p. 270.
Values in 1960 and 1965 were supplied by the U.S.Forest Service to the Public Land Law Review Commission

TABLE IV C-8

(same as TABLE III A-21)

CLASS SIZE DISTRIBUTION OF CATTLE GRAZING PERMITS IN BUREAU OF LAND MANAGEMENT DISTRICTS FOR TWO YEARS, 1950 AND 1960 a/

	Class I 50 or less			Class II 51-100			Class III 101-200			Class IV over 200			
Year	Number of per-mittees	Number Grazed	Average size of permit	Number of per-mittees	Number Grazed	Average size of permit	Number of per-mittees	Number Grazed	Average size of permit	Number of per-mittees	Number Grazed	Average size of Permit	Average size of permits all grades
	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Number
1950	43	7	25	20	10	74	17	16	143	20	67	491	152
1960	47	7	21	19	10	74	16	15	147	18	68	556	149

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a/ U.S. Department of the Interior, Bureau of Land Management. 1962. Adjustments in grazing use. An evaluation of adjustments in grazing use as they occur in the management of the federal range of the Bureau of Land Management. Processed. (100 pages) p. 8.

breakeven size when averaging cattle prices and ranch costs in the Eleven Western States. Going back to the 334 combined types of ranches in all four western areas analyzed from data collected by the Western Regional Research Project (W-79), some interesting comparisons can be shown as follows:

TABLE IV C-9

Area Combined Ranch Types	Adjusted Avg.Cost Beef/cwt(Y) a/	Ranch Size with Equal Cost c/	Avg. Farm Price Cattle/cwt b/	Ranch Size with Equal Cost c/
I-IV - Combined	$24.86	205 AU	$24.80	210 AU
I - Plains	23.79	215	26.20	180
II - Mountain	22.72	285	25.70	130
III - Southwest Desert	28.39	140	23.70	235
IV - Inter-mountain	24.34	265	23.70	285

a/ Table IV C-6.
b/ USDA Statistical Reporting Service, Agricultural Prices. (1962-6 averages)
c/ Figure IV C-7.

These comparisons show that the adjusted average cost of beef for the entire West is just over the average selling price. In other words, the average of the whole western industry is right at the breakeven point, and the average size ranch to achieve this is just over 200 head. In the Plains and Mountain areas, the "average" rancher has costs lower than his selling price. This is because his "average" sized ranch is considerably larger than it has to be to break even. In the Southwest Desert and Intermountain areas, however, the "average" sized rancher loses money because his "average" size ranch is not large enough. Particularly in the Southwest, it is essential that he increase the size of his ranch as his "average" losses are quite great.

The most important point to know is the last column which indicates the breakeven sizes where adjusted average costs equal average selling prices. The Mountain area is the only place where the rancher can make a profit and be substantially below the 200 animal unit size. In the Inter-mountain area, the size has to be close to 300 animal units.

The figures above make it appear that any reallocation policy that tends to increase the number of small ranchers will neither be doing the rancher, the industry nor the community a favor. In spite of these figures, it must be recognized that national welfare may require the continuation of a small ranch policy. Recent studies of rural poverty and migration have indicated that the removal of low income farmers from the land does not relieve the poverty problem. (1) Still, it appears difficult to justify the very large number of small operations on the public lands. It may be well for the agencies to give greater attention in their allocative policies to the problem of efficient resource allocation. At least, attempts should be made to eliminate those features of the allocative procedures which tend to encourage ranch operations which are too small to provide adequate family incomes. One exception to this argument is the case when they grow forage in their normal rotation. These farmers may find that with little additional cost they could add a number of cattle which would be largely complementary to their current operations. In this case, the cause of economic efficiency may best be served by adding the cattle. Another exception is where a small cattle ranch merely supplements a full time job off the ranch. However, for the most part it would appear that programs for consolidation would be more beneficial than programs that would increase the number of small ranchers.

Restrictions on Free Market Allocations of Forage Resources

It has been pointed out that under free market conditions, the ranches that were already established but wished to decrease their unit cost of producing meat could do so by increasing the size of their operations. Such firms could usually succeed in doing so by bidding the land resources away from other ranchers who had little property to begin with. The rancher striving to secure an efficient unit could afford to pay more for his land because it yielded more to him in terms of cost differentials. The theoretical analysis depends, of course, on the assumption that other things remain equal.

In general agriculture such a trend has been going on for the past two decades. There is no good measure of size of farms and ranches on a comparable basis for any long period of time. An indirect measure, however, is the number of farms. In the western states the average number of farms reached a peak in 1935 and declined thereafter. (4) Livestock farm numbers did not reach a peak in the Eleven Western States until 1945, but thereafter declined rapidly. Between 1945 and 1964, the total number of farms declined 40 percent in the West, while livestock farms declined only 21 percent. It would be improper to attribute the smaller decline in livestock ranch numbers solely to the policies followed by the federal land agencies in favoring the small family farm units. Nevertheless, some evidence may be gleaned from such statistics. When compared with livestock ranches in the North Central states, the pattern of rise and decline of western ranches was the same. Livestock numbers also reached a peak in the North Central states in 1945 and subsequently declined. The degree of decline in livestock ranch numbers in the North Central states was more precipitous than in the West. This decline was 33 percent between 1945 and 1964 as compared with 21 percent in the West. (4)

Most of the restrictions relating to size of ranches arise from commensurability requirements, limitation of numbers on U.S. Forest Service land, the requirement by the U.S. Forest Service for the purchase of animals or of land for transfer of privileges, and restrictions in numbers to prevent further deterioration of the land.

A serious question arises as to the continuing significance of the commensurability requirements which have been so closely tied to stability. It is questionable today that the agencies themselves put as much emphasis on this criterion as formerly, because of the exceptions which are being made. Cases arise today where ranchers discover that they can use their base property to greater advantage by growing cash crops than by producing hay. Perhaps they have been able to irrigate their base property. In such cases it would pay the rancher to sell his crops and to purchase hay. Other situations arise where ranchers can extend their season by renting land at lower elevations than their base property. They can optimize their income by renting their base property for grazing and renting the better land for winter pasture. In still other cases encountered in the interviews with ranchers discussed earlier, it was discovered that it is often cheaper to buy hay than to pay the high costs of labor to produce it themselves. There is also the situation with respect to parallel land where the rancher claims as his base property private land producing forage at the same season as the public land on which he has privileges. In this situation the rancher does not have property which will provide him year round feed for his cattle. 13/

In all the cases above, the public land agencies have been flexible in permitting such variations to occur while still considering the base property requirements as being met. By doing so they also tacitly recognize that the entire concept has less meaning than originally. If the financial ability to provide for the cattle throughout the year is the goal, other tests than base property could be used.

In spite of this, there are situations that arise in which attempts by ranchers to reorganize their operations to increase efficiency are met with refusal by the agencies on the grounds that strict commensurability requirements have not been accomplished. A number of examples covering situations of this nature were given. They ranged from problems associated with the ranchers' changing their type of livestock operation, to refusal to permit an attempt to improve ranch management by transferring part of the ranch ownership to a management firm without land or animals being transferred.

Still another situation arises in the use of water instead of base property for commensurability requirements in the Southwestern states

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13/ See Legal Chapter II, Section A, p. II-18.

where year-around grazing occurs. The question has been raised as to whether or not this provision constituted a discrimination in favor of ranchers operating in that area over those operating in other areas. 14/ None of the ranchers interviewed in the 75 Ranch Study 14/ indicated any discrimination regarding this. From the standpoint of value derived from the range land in the Southwestern regions, and referring again to the multiple correlation model, Table IV C-10 and Table IV C-11 for Equation 1, it can be seen that the combined rancher in the Southwestern Desert area utilized on the average 6.126 months of grazing on public lands per animal unit (x_1) compared with 3.303 months for the Western region as a whole. The net regression of public land (b_1) on the cost of meat per hundredweight was less in the Southwest area than for the region as a whole. The correlation showed a net regression of -.1188 for that area compared with -.1576 for the region as a whole. The regression in neither the Southwest area nor in the West as a whole was significant at the 5 percent level of significance. What these regressions mean is that, assuming that an animal unit on the average produces 300 pounds of beef, in the Southwest an AUM of public grazing would reduce the cost of producing 100 pounds of beef by 35.6 cents (3 x -.1188), whereas for the region as a whole an additional AUM would reduce the cost of beef by 47.3 cents (3 x -.1576).

In area I, the Plains area, the average was -.7925 per animal unit and it was significant at the 5 percent level; and in area II, the Rocky Mountain area, the average was -.8189 per animal unit, and this coefficient was significant at the 1 percent level. In area I the average public land per animal unit was only 1.179 animal unit months and in area II it was 2.521 animal unit months. This means that public land was valued in terms of cost reduction of beef at $2.38 per animal unit in area I and in area II at $2.46. It would seem that while commensurability requirements were lower in the Southwest the value of land is also lower. What the ranchers are given in the Northern regions is of more value than in the Southwest.

The only ranchers surveyed in this study were those possessing public land privileges. Consequently, their attitudes toward commensurability would not represent a random opinion of livestock ranchers. However, this group had no complaint over the commensurability requirements. Of the group surveyed, 59.1 percent had land in excess of commensurability requirements, 11.3 percent had the minimum requirements, and 29.6 percent had land in which commensurability requirements could not be measured, such as Section 15 land. About 40 percent of those interviewed had land in excess of 50 percent over the required amount for commensurability. 15/

14/ Chapter III, Section E, beginning on p. III-102.
15/ See 75 Ranch Interviews.

TABLE IV C-10

(same as TABLE III C-63)

MEANS AND STANDARD DEVIATIONS FOR CATTLE RANCHES IN THE WESTERN REGION, BY AREA AND BY TYPE
EQUATION I

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_3^2 + b_5(1/X_4) + b_6X_5 + b_7X_5^2 + b_8X_6 + b_9X_6^2$$

Area	Type	N	r^2	a (constant)		X_1	X_2	X_3	X_3^2	$1/X_4$	X_5	X_5^2	X_6	X_6^2	Y
All types	1 & 2	334	.5548	16.66	Mean	3.303	5.961	59.49	5,015.3	.00487	.06141	.00775	79.22	6,483.1	24.86
					Std. Dev.	4.836	6.526	38.48	9,982.4	.00526	.06314	.02666	14.44	2,038.3	11.14
I	1 & 2	90	.4239	1.75	Mean	1.179	8.331	54.23	3,688.7	.00421	.05778	.00478	81.91	6,908.5	23.79
					Std. Dev.	2.031	7.836	27.50	3,800.4	.00264	.03615	.00761	14.19	1,881.7	7.92
I	1	66	.6364	116.15	Mean	1.004	8.517	54.70	3,562.0	.00448	.06075	.00538	84.33	7,215.1	24.57
					Std. Dev.	1.918	8.553	24.05	3,329.3	.00271	.04141	.00861	10.23	1,592.2	7.63
I	2	24	.5101	- 33.51	Mean	1.662	7.821	52.92	4,037.0	.00346	.04958	.00312	75.25	6,065.2	21.64
					Std. Dev.	2.289	5.522	35.91	4,938.6	.00234	.02629	.00325	20.50	2,350.6	8.45
II	1 & 2	80	.3704	40.66	Mean	2.521	4.017	60.62	4,402.2	.00379	.05262	.00410	84.16	7,185.3	22.72
					Std. Dev.	2.356	4.115	27.14	4,217.2	.00312	.03666	.00685	10.16	1,609.6	6.07
II	1	54	.3600	54.34	Mean	2.268	3.90	67.76	5,313.2	.00455	.05889	.00503	85.48	7,412.2	23.70
					Std. Dev.	2.011	4.242	27.11	4,610.2	.00337	.03984	.00801	10.35	1,631.8	6.50
II	2	26	.6359	- 42.58	Mean	3.048	4.251	45.79	2,510.0	.00222	.03552	.00217	81.42	6,713.9	20.70
					Std. Dev.	2.923	3.908	20.73	2,372.2	.00171	.02490	.00252	9.36	1,483.0	4.54
III	1 & 2	87	.6727	11.65	Mean	6.126	7.031	48.70	4,620.2	.00752	.08828	.01812	73.34	5,623.0	28.39
					Std. Dev.	7.724	6.710	47.70	16,131.9	.00852	.10221	.04956	15.69	2,159.0	16.97
III	1	76	.7036	10.22	Mean	6.296	7.285	49.32	4,808.5	.00818	.09618	.02046	73.95	5,719.0	29.39
					Std. Dev.	8.137	7.005	49.07	17,161.2	.00889	.10660	.05264	15.94	2,191.7	17.63
III	2	11	.9936	- 7.86	Mean	4.947	5.276	44.37	3,319.8	.00301	.03364	.00192	69.18	4,959.7	21.52
					Std. Dev.	3.831	3.924	38.55	5,207.9	.00248	.02942	.00306	13.82	1,872.6	9.29
IV	1 & 2	77	.5134	32.79	Mean	3.407	4.000	76.66	7,649.4	.00378	.04442	.00328	77.56	6,228.1	24.34
					Std. Dev.	3.039	5.505	42.37	9,851.0	.00313	.03644	.00715	14.68	2,108.2	9.24
IV	1	47	.5218	30.53	Mean	3.663	4.393	85.18	9,308.5	.00432	.05085	.00422	77.49	6,270.6	26.64
					Std. Dev.	3.499	5.391	45.81	11,234.6	.00354	.04785	.00877	16.49	2,336.2	10.04
IV	2	30	.8013	34.10	Mean	3.006	3.383	63.35	5,050.2	.00293	.03433	.00182	77.67	6,161.5	20.71
					Std. Dev.	2.124	5.715	32.79	6,531.9	.00213	.02569	.00288	11.57	1,726.9	6.41

Area I	The Great Plains Area: Eastern Montana, eastern Wyoming and eastern Colorado.
Area II	The Rocky Mountain Area: Idaho, western Wyoming and western Colorado.
Area III	The Southern Desert Area: Arizona, New Mexico and southern Nevada.
Area IV	The Intermountain Area: Eastern Oregon, northern Nevada.
Type 1	Cow-calf Ranches.
Type 2	Cow-yearling Ranches.

(1 of 2)

TABLE IV C-11

(same as TABLE III C-62)

PARTIAL REGRESSION b-VALUES FOR CATTLE RANCHES IN THE
WESTERN REGION, BY AREA AND BY TYPE
EQUATION 1

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_3^2 + b_5\left(\frac{1}{X_4}\right) + b_6X_5 + b_7X_5^2 + b_8X_6 + b_9X_6^2$$

Area and Type		n	R^2	Standard Error Of Estimate	a	b_1			b_2	b_3	b_4	b_5	b_6	b_7	b_8	b_9
						Value	t	Sig. Lev. %								
Areas I, II, III, IV		334	.5548	7.536	16.66	-.1576	-1.755	7.6	.1968 **	-.0206	.00041 **	1135.1 **	29.2	-63.8	.1695	-.00309
I	1 & 2	90	.4239	6.338	1.75	-.7925 *	-2.349	2.0	.0740	.2188 **	-.00117 *	1161.5 *	46.6	-163.7	.4101 *	-.00370 *
I	1	66	.636	4.959	116.15	-.5093			.2428 **	.1402	.00001	405.7	41.1	-184.2	-2.4602 **	.01432 **
I	2	24	.5101	7.578	-33.51	-.7681			.2585	.7483 **	-.00528 *	-1300.6	798.6	-4549.1	.6476	-.00553
II	1 & 2	80	.3704	5.118	40.66	-.8189 **	-3.268	0.15	.2548	-.0693	.00022	361.4	161.2 **	-641.6 *	-.5176	.00312
II	1	54	.3600	5.708	54.34	-.9866 *			.2129	-.1172	.00049	416.1	153.1	-640.6 *	-.8177	.00517
II	2	26	.6359	3.424	-42.58	-.6863 *			-.0603	.2352	-.00232	122.7	-214.9	2729.3	1.7197	-.01147
III	1 & 2	87	.6727	10.259	11.65	-.1188	-3.757	44.	.2860	-.0016	.00039 *	4198.6	-212.8	-79.9	.2575	-.00293
III	1	76	.7306	10.230	10.22	-.0179			.2533	.0062	.00038 *	2447.8	-58.0	-98.0	.2905	-.00320
III	2	11	.9936	1.656	-7.86	-.8912			1.9298	.9119	-.00536	27409.1	-1759.3	-4590.5	NA	.00137
IV	1 & 2	77	.5134	6.868	32.79	-.2226	-0.691	49	.2197	.0264	.00014	34.5	89.0	128.2	-.2300	.00027
IV	1	47	.5218	7.765	30.53	-.3872			.1931	.0233	.00019	-1653.0	144.6	472.3	.0482	-.00218
IV	2	30	.8013	3.477	34.10	-1.4517 **			.3614 *	.0842	-.00079	-520.0	198.0	365.8	-.5167	.00367

* Significant at the .05 level
** Significant at the .01 level

Area I The Great Plains Area: Eastern Montana, eastern Wyoming and eastern Colorado.
Area II The Rocky Mountain Area: Idaho, western Wyoming and western Colorado.
Area III The Southern Desert Area: Arizona New Mexico and southern Nevada.
Area IV The Intermountain Area: Eastern Oregon, northern Nevada.

Type 1 Cow-calf Ranches
Type 2 Cow-yearling Ranches

(Facing page IV-80)
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The Public Concern in Allocative Justice

The determination of the degree of justice and fairness of income distribution between the Government and individuals is a permanent issue. Like most issues of this nature it is never settled. When criteria were determined that emphasized the custodial rather than the landlord relation of the Government to the public lands, the decision was made not to use maximization of income as the basic criterion. As a consequence, the public has not secured the optimum returns on its land resources. Nor has the public been completely satisfied with the allocation of the income between the Government and the users of the forage lands. A more complete analysis of the new policy to secure for the Government the full user cost differential in public lands is reserved for the next chapter.

No analysis of allocative justice and fairness would be complete without consideration of tax obligations to users and non-users. Recognition of possessory interest in the land by the user to the point of permitting a capital value to arise, would seem in all fairness to involve a tax obligation equal to that for owners of private grazing lands.

All states exclude federal public lands from the tax rolls. California and Washington do tax the possessory interest obtained by users of the public land. It is readily recognized that, although range permits are not directly taxable, they may be indirectly taxed because of the value they add to the base property of the ranch. An attempt was made in this study to determine the extent to which indirect taxation may or may not have occurred. This attempt included an effort to secure information by which assessment procedures on lands that did not have public grazing privileges could be compared with assessments on lands that did. This information was not attainable in any form that would support a reliable conclusion.

In the questionnaire used in the 75 ranches selected for intensive interviews (Chapter III, Section E), the ranchers were asked whether they felt that they paid taxes on the privileges they secured on the public range. They were almost unanimously of the opinion that they were not taxed.

Since both the U.S. Forest Service and the Bureau of Land Management remit a percentage of the fees back to the counties in lieu of taxes, it would seem that in this respect at least an approach to an equitable arrangement has developed.

Reference Material

Chapter IV - Section C
Allocative Justice and Fairness

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2. Maier, Frank H., James L. Hendrick and W. L. Gibson, Jr. "The Sale Value of Flue Cured Tobacco Allotments." Virginia Polytechnic Institute, Agricultural Experiment Station, Technical Bulletin No. 148, April, 1960.

3. U. S. Department of Agriculture. "Grazing Fees Report -- An Updating of a November 12, 1968 Report to January 15, 1969." p. 5.

4. U. S. Department of Commerce, Census of Agriculture.

SECTION D

STABILITY

Policy Statements and Programs Relating to Stability

It was pointed out in the previous chapter that the major public land agencies, the U.S. Forest Service and the Bureau of Land Management, placed great emphasis on stability as an objective of public land policy. In allocating forage resources, stability rather than market price was one of the principal criteria by which individuals to be granted grazing permits were selected.

Although the objective of stability was affirmed on numerous occasions, the exact nature of the stability to be attained and the process by which it would be reached has not clearly been stated. The U.S. Forest Service, which has been most concerned with stability as a criterion, has mentioned several areas which its concept of stability would embrace: stability of the livestock industry, stability of the family farm, and stability of the local community. Stability would be attained through commensurability, or sufficient land resources to provide for the livestock throughout the entire year; through limitation in size of the permits granted individuals using forest lands; through prevention of monopoly and the maintenance of the family farm; through free use of forest grazing resources by non-commercial domestic livestock to benefit local farmers; and through management practices which would insure permanent use of the land. Under the Taylor Grazing Act, also, stability was a stated objective which the Bureau of Land Management was instructed to observe.

The problem of stability is posed at this point because it is often in conflict with other goals or objectives of policy. Kenneth E. Boulding has stated that the national issue of stabilization is "what may be the greatest dilemma of economic policy: can we stabilize both output and prices? And if not, what do we abandon, and how do we divide the efforts between them?" 1/ The issue in grazing is especially basic: can we stabilize the range livestock economy and at the same time secure the maximum returns to the Government in the form of fees or rentals for the public grazing lands?

In this chapter it is proposed:

---to examine the objective of stability as it relates to the policies of retention or disposal of public lands;

1/ Boulding, Kenneth E. Principles of Economic Policy, Prentice-Hall, 1958, p. 78.

---to consider fees derived from the grazing lands under the policy in effect before January, 1969 ---and under that, effective after that date;

---to study the results of the old and new fee policies above on income distributions and on stability; and

---to weigh the effect of current policies on stability of tenure.

Disposal Policies as They Relate to Stability

There are three concepts in relation to retention and disposal of public lands: (1) the disposal of public lands to remove them from public responsibility and to get them into the hands of others, as, for example, disposal to states or to private individuals; (2) retention subject to disposal, as by the Bureau of Land Management; and (3) retention in the sense of permanent withdrawal from private use, as in the situation with respect to the forest reserves. All three concepts are considered in this study. It is necessary to keep the distinctions in mind, especially in consideration of the difference in policy between the U.S. Forest Service and the Bureau of Land Management.

The Bureau of Land Management continues to dispose of the public lands. Land can still be homesteaded under the Homestead Act, the Desert Land Act, the Enlarged Homestead Act, and the Grazing Homestead Act. It can be withdrawn for reclamation development under the Reclamation Act. All of these acts provide that the land will ultimately get into the hands of farmers in family-sized farm units. To secure lands under any of these provisions, it is necessary to demonstrate that the land can be put to a higher use for farming purposes.

The U.S. Forest Service early in its existence continued to permit homesteading under the Forest Homestead Act of 1906. This Act authorized the Secretary of the Interior to open for entry forest reserve lands which, in his opinion, were chiefly valuable for agriculture, were not needed for other public purposes, and could be farmed without injury to the forests. By 1915, 1,900,000 acres had been classified and opened to entry. Later the U.S. Forest Service regretted this over-liberality in granting homesteads. The Act was finally repealed in 1962. (4) (8) 2/

The homesteading provisions of the U.S. Forest Service before they were repealed and of the Bureau of Land Management have two implications for stability. Homesteading and reclamation withdrawals lessen the security in tenure of the livestock ranchers and thus the stability of the livestock industry. On the other hand, by changing the nature of the activity from extensive agriculture in cattle grazing to intensive agriculture in crops, the stability and growth of the local communities is greatly enhanced. Intensive agriculture tends to lead to a higher concentration of population in a given area and to produce a much higher income per acre of land cultivated than does livestock grazing. The impact of the land on the local communities is, therefore, greatly increased; provided, of course, that the farms are operated in family-sized units.

2/ 76 Stat. 1157, PL 87-869.

Other provisions for withdrawal are not so easily reconciled with the objectives of stability. Withdrawals for national parks, for wildlife refuges, for recreation, and for scenic rivers and wilderness areas may detract from the stability of the local community. The fact that the public land agencies or the Congress are tending to provide for more of this type of withdrawal would seem to indicate that the stability objective is becoming less significant for public land administration than are other objectives.

Pricing Policies - Fees

The concern with considerations of stability reflected itself in the fee structure of the major public land agencies. The collection of grazing fees on the forest reserves began in 1906. The principle of competitive bidding was not adopted because the U.S. Forest Service felt that it would be disadvantageous to the small operator and would lead to instability in agriculture. (26)

In a similar manner, the Grazing Service (later known as the Bureau of Land Management), operating under the Taylor Grazing Act, charged fees for the use of the grazing land. In setting the initial fees for range use, the Secretary of the Interior was directed to take into account the extent to which grazing districts yield public benefits over and above those accruing to the users of the forage resources for livestock purposes. 3/ At a district advisers conference in Salt Lake City on January 13 and 14, 1936, the following statement from Secretary of the Interior Harold Ickes was read to the delegation:

> "One of the principal purposes of the present conference is to discuss the question of grazing fees as provided by the law. I will refer again to a statement I made at the Denver conference which I still believe to be applicable. I quote:
>
> 'The Interior Department will have no quarrel with stockmen on that subject. You are willing to pay reasonable fees, and that is all we will expect. I believe that fees should be on a sliding scale varying with the earning capacity of the land as measured by the market value of the livestock grazed upon it. Fees should not be so low as to arouse the envy of those not entitled to public range rights or as to subject the permittees to a charge of receiving a Government subsidy.

3/ Taylor Grazing Act, Section 3.

> 'The whole question of fees, at the beginning, will be experimental. We will approach the matter with an open mind and consider it from the standpoint alike of the public interest and of the welfare of the stockmen.'"

In remarks made by the then First Assistant Secretary of the Interior T. A. Walters at the same conference, he stated:

> "The Department of the Interior has not now, and never had, any intention of adopting a scale of high fees. One of the purposes of this meeting is to work out a fee which will be reasonable and satisfactory to the industry."

The concept of what constituted a reasonable fee began to undergo a change early in the history of each agency. The U.S. Forest Service began studies in 1916 to determine a fair fee for national forest ranges having comparable value to those of privately-owned western range lands. (5) Objectives by the U.S. Forest Service in 1920 to an attempt by the House Committee on Agriculture to increase fees by as much as 300 percent led to the Rachford Range Appraisal. This appraisal of rental values on comparable private range land was to provide a basis for determining values of national forest range. A conference was held in Salt Lake City in 1927 to consider grazing fee matters on the national forests. Mr. W. B. Greely, Chief of the U.S. Forest Service made statements at the conference that amalgamated the early concepts of user charges with the emerging concepts. His remarks emphasized the need for continuation of the policy to consider the economic and social stability of nearby communities in establishing a fee for the use of national forests by grazing livestock. Mr. Greely restated the need for a principle of fair compensation reasonably applied. (5) Secretary of Agriculture Jardine in a talk to the National Woolgrowers just prior to the 1927 fee conference in Salt Lake City remarked:

> "The livestock industry can hardly expect the permanent status in the National Forests which it desires unless the principle of fair compensation for the value of the forage is recognized and accepted. On any other basis, the industry would be in an indefensible position. It would be constantly subject to attack."

Jardine also stated in the same message that, "I do not believe in charging all the traffic will bear." 4/

A new fee schedule was imposed in 1928. Plans were then developed for relating future grazing fees to market prices of livestock and comparable private land values. This new plan was implemented in 1933 at the request of the users of the national forests. (6) This was and has been the basis of establishing fee rates on national forest until the

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4/ DeNio, R.N. "Principles Governing Grazing Fees on Lands Administered by the U.S. Forest Service." Proceedings Society of American Forests, Atlanta, Georgia, 1962.

recent announcements by the Secretary of Agriculture and the Secretary of the Interior.

The Grazing Service initiated a study of fees in 1941. The results of this study indicated higher fees, based on land values, were justified. (2) Studies were conducted by the Bureau of Land Management between 1946 and 1950 to determine the true value relationship between federal and private land grazing. (21) Additional studies conducted by the Bureau and various State Agricultural Experiment Stations to determine and relate fees on public land to market value followed the earlier studies. These studies, pressure from Congress, and the Independent Offices Appropriation Act of 1951, which stated that fees "shall be self-sustaining to the full extent possible," 5/ led to a revision of the fee schedule on public domain lands. Beginning in 1958, fees were based on the average of the previous year's livestock price per pound.

Continued criticism of the fee rate on public lands prompted Secretary of the Interior Udall in 1963 to change the base for calculating the fee from the previous year's livestock price per pound to 1.5 times this price. Secretary Udall commented at the Annual Convention of the American National Cattlemen's Association held at Las Vegas, Nevada, on January 30, 1963:

> "People who use the public domain should help pay the costs. We think that is true if you use the land for grazing livestock. We also think it is true in the case of people who use the land for outdoor recreation."

Concern and criticism of user charges for federal natural resource uses persisted. This prompted the Bureau of the Budget to issue circular A-25 in 1959 providing guidelines to establish user charges for federal resource use. Inconsistencies in the interpretation and application of policies specified in circular A-25 caused the issuance in 1964 of the circular, "Natural Resources User Charges: A Study by the Bureau of the Budget." To implement the directives of the Bureau of the Budget, a cooperative fee study was undertaken in 1966 by the Departments of Agriculture, Defense, and Interior. The outcome of that study is the basis for establishing the present fee levels.

Historically, grazing has been an important use of land administered by the U.S. Forest Service. After transfer of the forest reserves to the Department of Agriculture in 1905, grazing receipts made up the largest part of the total receipts derived from the forest reserves. In 1906, grazing receipts were 67.7 percent of the total receipts. Through the years, the percentage that grazing receipts contributed to total receipts has steadily declined. Table IV D-12 shows that in 1965 this activity supplied only 2.1 percent of the total receipts derived from national forests. Timber receipts in 1906 were 31.2 percent of the total and 93.3 percent in 1965. (1)

5/ 5 U.S.C. § 140 (1964).

Fees for grazing on the public domain were not initiated by the Grazing Service until 1936. At that time (Table IV D-13) they made up about 1 percent of the total receipts from the public domain. Grazing receipt percentages of total receipts were highest (about 10 to 12 percent of total receipts) in the period from 1938 to 1942 and have steadily declined since then. In 1965 they were 1.8 percent of total receipts.

The principal source of revenue from the public domain has been from mineral production rents and royalties. This activity contributes 70 to 85 percent of the total receipts. (1) Timber receipts on acquired and revested public domain were ten times higher than grazing receipts in 1965. (1) This is principally due to timber harvest on the O & C and Coos Bay revested lands.

Income Effects of Fee Charges for Public Lands on Ranch Firm

To assess the effects of fees upon the economy it will be necessary to consider their effects: first, upon the ranch firm; second, upon the community; and third, upon the state and nation as a whole.

From the standpoint of the ranch firm, the fees assessed at the level established up to January 1, 1969, have not been large in comparison with other costs. In 1964 the average fee charged by the U.S. Forest Service was 48 cents per AUM on the national forests and 53 cents per AUM on the National Grasslands. The Bureau of Land Management charged 30 cents per AUM for grazing district lands and 27 cents per AUM for Section 15 leased lands. The National Park Service charged 30 cents per AUM. These fee rates contrast greatly with those of the Bureau of Indian Affairs, which charged an average of $1.59 per AUM, and of the Bureau of Sport Fisheries and Wildlife, 6/ which charged an average of $1.20 per AUM. The latter agencies used an appraisal system for charging fees. The fact that Bureau of Indian Affairs lands bring higher rates of return to the agencies may not be due entirely to the procedure in assessing fees. This Bureau has acted as a trustee for the Indian tribes and consequently has endeavored to secure as large a return as possible for their lands. Thus, it has acted as a landlord trying to optimize rental income. It must be recognized, however, that leased Indian grazing lands may be somewhat more productive than either Bureau of Land Management or U.S. Forest Service lands as they have a larger percentage of lands rated as either excellent or good. 7/

That the fee charge is below the true value of the lands has been established by comparison between the rental values of public lands and

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6/ See Table III A-27.
7/ See Section B, this chapter, Figure IV B-6.

TABLE IV D-12

NATIONAL FOREST LANDS: SUMMARY OF RECEIPTS ON NATIONAL FORESTS, GRAZING RECEIPTS AND THE PERCENT THAT GRAZING RECEIPTS ARE OF TOTAL RECEIPTS a/

(in thousands of dollars)

Year	Total Receipts	Grazing Receipts	Percent Grazing Receipts is of Total Receipts
1906	758	513	67.7
1907	1,530	857	56.0
1908	1,788	947	52.7
1909	1,766	1,023	57.9
1910	2,041	970	47.5
1911	1,969	928	47.1
1912	2,109	961	45.6
1913	2,392	999	41.8
1914	2,438	1,002	41.1
1915	2,481	1,130	45.5
1916	2,824	1,210	42.8
1917	3,457	1,550	44.8
1918	3,575	1,726	48.3
1919	4,358	2,609	59.9
1920	4,793	2,486	51.7
1921	4,152	2,132	51.3
1922	3,422	1,316	38.5
1923	5,336	2,341	43.9
1924	5,252	1,916	36.5
1925	5,000	1,725	34.5
1926	5,156	1,422	27.6
1927	5,167	1,531	29.6
1928	5,442	1,714	31.5
1929	6,300	1,740	27.6
1930	6,752	1,943	28.8
1931	4,993	1,961	39.3
1932	2,294	830	35.2
1933	2,626	1,498	57.0
1934	3,315	1,359	41.0
1935	3,289	1,151	35.0
1936	4,063	1,441	35.5
1937	4,936	1,580	32.0
1938	4,671	1,696	36.3
1939	4,903	1,574	32.1
1940	5,859	1,463	25.0

TABLE IV D-12, Continued

(in thousands of dollars)

Year	Total Receipts	Grazing Receipts	Percent Grazing Receipts is of Total Receipts
1941	6,630	1,429	21.5
1942	7,165	1,595	22.3
1943	10,056	1,973	19.6
1944	15,617	2,459	15.7
1945	16,048	2,159	13.5
1946	13,875	2,060	14.8
1947	18,372	2,294	12.5
1948	24,374	2,898	11.9
1949	31,208	3,276	10.1
1950	33,672	3,385	10.1
1951	56,293	4,166	7.4
1952	69,955	5,023	7.2
1953	74,939	4,416	5.9
1954	66,014	3,107	4.7
1955	78,250	2,953	3.8
1956	112,307	2,906	2.6
1957	108,027	2,682	2.5
1958	88,973	3,013	3.4
1959	118,820	3,751	3.1
1960	141,804	3,644	2.6
1961	100,352	3,268	3.3
1962	109,112	3,195	2.9
1963	120,169	3,385	2.8
1964	131,567	3,181	2.4
1965	142,200	3,040	2.1

a/ Excludes receipts from National Grasslands.

Source: Clawson, Marion. 1967. The Federal lands since 1956; recent trends in use and management. Resources for the Future, Inc. Washington, D.C. Appendix Table 5.

TABLE IV D-13

PUBLIC DOMAIN ACQUIRED AND REVESTED LANDS: SUMMARY OF TOTAL CASH RECEIPTS AND GRAZING RECEIPTS, 1936-1965

(in thousands of dollars)

Year	Total Receipts	Grazing Receipts	Percent Grazing Receipts is of Total Receipts
1936	5,195	49	0.9
1937	7,400	530	7.2
1938	8,447	866	10.2
1939	7,748	977	12.6
1940	7,520	748	9.9
1941	8,655	1,114	12.9
1942	9,921	1,095	11.0
1943	10,568	980	9.3
1944	15,118	1,016	6.7
1945	14,371	997	6.9
1946	14,087	965	6.9
1947	21,100	1,111	5.3
1948	33,913	1,454	4.3
1949	37,984	1,246	3.3
1950	36,991	1,551	4.2
1951	50,348	1,708	3.4
1952	65,967	1,999	3.0
1953	67,274	2,112	3.1
1954	78,693	2,057	2.6
1955	231,852	2,240	1.0
1956	212,004	2,440	1.2
1957	112,059	2,286	2.0
1958	127,385	2,763	2.2
1959	136,721	3,228	2.4
1960	371,068	3,488	0.9
1961	159,246	2,982	1.9
1962	173,518	2,780	1.6
1963	530,693	4,028	0.8
1964	199,052	4,406	2.2
1965	234,361	4,251	1.8

Source: Clawson, Marion. 1967. The Federal lands since 1956; recent trends in use and management. Resources for the Future, Inc. Washington, D.C. Appendix Table 27.

private lands, and by cost analyses of public and private ranges as developed by the Interdepartmental Fee Study and by the W-79 schedules used in this report. 8/

Because of the enormous variations in costs in ranching enterprises it is difficult to come to a conclusion about the reasonableness of the fees. The same land is not worth the same to all individuals. As shown in the previous section, economies of scale are a very important factor in costs. They affect the value of land differently to different operators depending on their size. Cattlemen point out that when private land is rented, the cattlemen often know the condition of the grass before the rent is determined. On government land the fees are assessed without great regard to the forage supply on the range in any one year. Stockmen indicate that frequently they encounter poor forage conditions on their public ranges and resultant shortages of feed occur. They are willing under these conditions to pay practically any price for additional range land on a temporary basis to protect their herds. Dr. M. L. Upchurch has pointed out that "in some areas private range may sell or lease at a high price because the price of public range is institutionalized at a relatively low level. Under such circumstances, arbitrarily setting the price of public grazing equal to that of private grazing would not make sense."9/ All of these factors enter into the price paid for private range land under varying circumstances. 10/ Sufficient evidence exists from the fee study and from other sources to justify the conclusion arrived at by the public land agencies that current fees are below the economic value of the public lands to the users.

Chapter III, Section D, describes a correlation analysis utilizing data from 334 ranch records obtained from several states that participated in the Western Regional Project W-79. Equation 1 was developed in this correlation analysis for all analytical purposes except when scale is being examined. Reference to tables IV C-10 and IV C-11 facing page IV-80, reveals that the W-79 data shows very little effect of public land grazing on reducing costs of meat as compared with private land grazing. For the Western region as a whole, results obtained were not significant to the 5 percent level. The independent variable used in analyzing the economic effect of public land (X_1) was the number of AUM's of public grazing land per animal unit. In the correlation model, private land was valued at $2.50 per AUM. If public grazing land on which lower fees were included had a significant value over private land in the multiple correlation equation, it would have

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8/ Chapter III, Section A.

9/ Upchurch, M.L. "Public Grazing Lands in the Economy of the West" in American Association for the Advancement of Science: Food and Water Use, Washington, D.C., 1963, p. 93.

10/ Interviews with cattlemen in Boise, Idaho, November 7, 1968.

been reflected in the net regression coefficient (b_1) of public land on the cost of meat produced. In Equation 1, the net regression of public land on costs in the Western Region is -15.76 cents. This indicates that each AUM of public grazing decreases the cost of meat per 100 pounds produced by 15.76 cents. If it is assumed (as has been done in earlier examples) that an animal unit is equivalent to 300 pounds of meat produced, then the overall cost saving of grazing public land over private land is worth 3 X 15.76 = 47.3 cents per AUM.

As indicated, the correlation model assumes that private land costs $2.50 per AUM. This is the monthly sum required to yield a 5 percent return on a $600 per animal unit investment in land. Had another cost figure been placed on private land, the returns from public lands would have been affected; as would also have been the degree of significance of the net regression equation. For instance, if the cost of private land had been assumed to be higher than $2.50 per AUM, the contribution of the public land would also have been increased. The reverse would have been true if a lower cost had been assigned to private land.

The net regression coefficient (b_1) for federal land using Equation 1 did show a good degree of significance in two of the sub-areas. A summary of this data for sub-area I, the Plains area comprising the eastern part of Montana, Wyoming and Colorado; and for sub-area II, the Rocky Mountain area consisting of the mountain counties in Idaho, Wyoming and Colorado, are as follows:

Area	Net Regression Coefficient-b_1	Degree of Significance Level	Grazing Cost Saved per AUM increase in public land
I Plains	-.7925	5%	$.7925 x 3 = $2.38
II Mountain	-.8189	1%	$.8189 x 3 = $2.46

In other words, each animal unit month of public grazing saved about $2.40 in grazing costs to the users in these two areas over equivalent private lands.

Even though the net regression coefficient of public land on the cost of meat produced was not significant within 5 percent or less in the other sub-areas, the coefficients are worth noting. Sub-area III is the Southwest Desert area which included New Mexico, Arizona, and the southern portions of Nevada. Sub-area IV is the Intermountain area covering northern Nevada, northwestern California, and eastern Oregon. A summary of the data for these areas are:

Area	Net Regression Coefficient-b_1	Degree of Significance Level	Grazing Cost Saved per AUM increase in public land
III SW Desert	-.1188	Not. Sig.	$.1188 x 3 = $.356
IV Inter-mountain	-.2266	Not. Sig.	$.2266 x 3 = $.680

The degree of significance of the net coefficient of public land on cost of meat per hundredweight depends upon the multiple cumulative equation applied. Equation 2, which drops from the equation the quantity of labor per animal unit and the amount of investment in machinery per animal unit, does give a significant net regression coefficient of public land on the cost of producing a hundredweight of meat. However, by using this equation the coefficient of multiple determination decreases from .5548 to .4553. Using Equation 2 for the Western Region as a whole (Table IV C-5, facing page 72) the net regression of public land per AUM is -.2170 and it is significant at the 5 percent level of significance. Assuming as above the amount of meat produced per animal unit is 300 pounds, the cost savings of public land in terms of decreasing costs of production per animal unit month is 65 cents.

In Area I the net regression equation for the combined ranch types is -.6931 and it is significant at the 5 percent level. This coefficient suggests that public land in the Plains Area saved $2.08 per AUM in grazing cost. In Area II the comparable net regression coefficient is -.7789 and it is significant at the 1 percent level. This suggests that in the Rocky Mountain Area, public grazing land saved $2.34 per AUM in grazing cost. In Areas III and IV, Equation 2 does not provide significant coefficients to the 5 percent level. The combined types net regression for Area III is -.1657 and for Area IV -.3354. These figures show that the grazing cost savings of public lands in these areas are respectively 50 cents and $1.07 per AUM. Since these coefficients are not significant at the 5 percent level, little importance can be attached to them.

The average number of AUM's of public grazing land per animal unit for the entire area was 3.30 months. The highest average for the combined ranch type areas was in Area III with 6.12 months. The smallest average was in Area I with 1.17 months. Area II had 2.52 months and Area IV had 3.41 months. Thus Areas I and II, which had the largest grazing cost savings per AUM, had the shortest grazing periods available on public land.

The impact of the grazing fee on ranchers prior to January 1, 1969, was small. The Bureau of Land Management fee was 33 cents per AUM. The formula that resulted in this fee was:

Cost/AUM = 1.5 (avg. price of beef/lb. + avg. price lamb/lb.)/2. 11/

11/ See Legal Chapter II, p. II-23.

The U.S. Forest Service base rates were established by comparison with private land. (24) Annual adjustments in base fee rates were tied to livestock prices. As a consequence, all rates varied somewhat with the returns to the rancher for his product, meat. The average U.S. Forest Service charge just prior to 1969 was 51 cents per AUM. On the average, U.S. Forest Service fees reached a low in 1934 and a peak in 1952 when beef and lamb prices were also at a peak. Bureau of Land Management fees have shown a constant rise since 1953, but since the capital values of the grazing privileges have also been rising steadily, the ranchers have found the capital assets in the range privileges rising at a more rapid rate. (1)

One way of analyzing the impact of the grazing fee on the ranching business as it has developed, is to relate the cost of this fee to the capitalized values that have accumulated in the permits. When capitalized at 6 percent, the average U.S. Forest Service fee cost of 51 cents is equivalent to only $8.50. This compares with the U.S. Forest Service's estimated capitalized value of their average permit in 1966 of $25.35 for cattle and $19.45 for sheep per AUM. (25) If it can be assumed, as the U.S. Forest Service affirms, (23) that an average of 50 percent of the capitalized value has been paid for by the average rancher, the other 50 percent represents the average appreciation of value since the time of purchase. Therefore, at no time have the fees prior to 1969 actually decreased the capital value significantly. The same situation can be shown for the Bureau of Land Management fee.

The effect of the fees on income, however, is quite different. Costs of ranching have risen more rapidly during the last two decades than the price of the animals produced. As a consequence, ranchers, like farmers generally, have experienced a cost-price squeeze. Although there has been a pronounced tendency for all agricultural firms to become larger, crop farms have increased in size more rapidly than cattle and sheep ranches. Since 1940 all farms in the Eleven Western States have decreased in number from 510,000 to 300,000, a decrease of 40 percent. Livestock ranches, on the other hand, decreased from 75,000 to 63,000, a decrease of only 16 percent. 12/

The persistence of the very small ranches has had the effect that a large percentage of them do not cover their costs through ranching operations alone. The W-79 data described in Section C of this chapter indicate that unless ranches reach a size of about 200 animal units, they have difficulty in covering all their costs of operations, including wages for the ranchers and their families. Any fee charged on an operation of this size has to be borne by cutting the living standards of the ranch family, or by securing off-ranch employment.

12/ See Section C p. IV-78.

It has been pointed out that the fees represent only a small percentage of the cost of operating ranches. Nielson showed that current fees amount to 0.6 percent to 1.2 percent on typical size groups of sheep ranches in Utah. (16) On an intermountain cattle ranch in Utah, the fees represent from 1.99 percent to 2.3 percent of operating costs, and on mountain cattle ranches in Utah, from 2.1 percent to 2.5 percent. Only two size classes were included. These percentages are not very large. However, in an industry in which costs exceed total returns in a majority of ranches, a loss of 1.9 percent to 2.5 percent of their total cost may be substantial.

On page IV-77, Section C of this chapter, Table IV C-9 was developed to show the ranch size in AU's required to have a breakeven operation for the adjusted average cost of beef (y) as developed in the correlation model, and also the ranch size that would equal the average farm price for cattle in 1962-66. This table shows that for the Western area as a whole, a ranch of 205 AU is required to break even and a ranch of virtually the same size (210 AU) is required to equal the average farm selling price. Therefore, the "average" rancher in the Western area is operating right at the breakeven point after paying wages to himself and to his family. In the Plains area and in the Rocky Mountain area the "average" rancher appears to make a modest profit. However, in the Intermountain area he has a small loss, and in the Southwest Desert area he appears to have a sizeable loss.

Further evidence of low returns to the average rancher can be ascertained from the following quotation in a Forest Service Fee study:

> "On the average, cattle and sheep ranches in the western states received 2.0 percent and 2.6 percent return respectively on their investment. One-half obtained between 1.0 and 3.0 percent rate of return. About one-fourth of the ranchers received less than one percent or a negative return, while only one-fifth received over 4 percent. These same ranchers were paying 5 percent interest on borrowed capital." 13/

13/ U.S. Forest Service, "Important Considerations in Revising Forest Service Grazing Fee Structure," Prepared by the Forest Service, Division of Range Management, for an August 5, 1968, meeting, with the National Conservation Organization, p. 1.

This same Forest Service study also pointed out that the small ranchers comprise the largest percentage of the commercial cattle operators with permits on U.S. Forest Service land. It states that "only 8 percent ... own more than 500 cattle; 83 percent own less than 300; 53 percent own less than 100." Similar data is shown in Section C on pages IV-75 and IV-76, and in Tables IV C-7 and IV C-8. These tables show that in 1965, 78 percent of the U.S. Forest Service permittees had permits for 100 head or less of cattle, and 55 percent for 40 head or less. In 1960, 66 percent of the Bureau of Land Management permittees had permits for 100 head or less of cattle, and 47 percent for 50 head or less. Of those permittees with permits for 200 head or more, 18 percent of the Bureau's permittees were included and only 9 percent of the U.S. Forest Service's were that large. From the W-79 data referred to before, it would appear that only 17 percent of the ranchers were actually covering their cost at the grazing fee level prior to 1969. In fact, perhaps the greatest range problem relating to income is the predominance of uneconomically small ranches. As discussed in Section C, this problem has its roots in the allocation criteria used by the federal land agencies at the start, a policy which discriminated in favor of small family ranches. Also, ranch operator efficiency was never a criterion of public land agencies. However, while the fee situation may have aggravated the small ranch problem, it was too minor proportionately to be considered a prime cause of it.

The Impact of the New 1969 Fee Structure on Range Livestock Ranches

Pursuant to the Budget Bureau Circular A-25 of September 23, 1959, referred to above, Secretary of Agriculture Orville Freeman and Secretary of the Interior Stewart L. Udall announced on November 14, 1968, a change in the methods of determining fees for range livestock on the U.S. Forest Service and Bureau of Land Management lands. The new base which would approximate a fair market value was to be attained over a ten-year period beginning in 1969.

After the Budget Bureau Circular in 1959, the U.S. Forest Service and the Bureau of Land Management began a series of grazing fee studies. These studies consisted of a background study undertaken by several western land grant universities, the development of a model for the analysis of user costs by Utah State University, and an interdepartmental study of user costs by the Statistical Reporting Service in cooperation with the Bureau of Land Management, the U.S. Forest Service, and the livestock industry.

The area covered by the cooperative study was made up of the 17 western states. Ten thousand individuals were interviewed. The purpose of the study was to determine the difference in costs between grazing on public lands and on private lands, assuming that no fees were charged on the public lands but including the cost of leases or rentals on private lands. The difference between the two types of lands would provide an estimate of the user cost differential between public and private lands. This difference would be considered the value of the public grazing lands to the user.

The results of the study can be briefly summarized: The average costs of operating on private land for cattle was $5.31 per animal unit, while the comparable non-fee costs of operating on public land was only $3.75, thus providing a differential between private and public land of $1.56. The average cattle grazing fee for the survey area in 1966 was 51 cents per AUM in the U.S. Forest Service and 33 cents in the Bureau of Land Management. It was determined, also, that the variations in grazing costs were very large within and between geographic areas, livestock type, season of use, and size of permit. Size of permit was the largest and most consistent cause of variation in costs. The other relationships did not show significant differences. The analysis also showed a cost differential of 62 cents on the average between the Bureau of Land Management and the U.S. Forest Service lands. When adjustments were made for the pattern of seasonal use and for size of permits, this differential was reduced to 11 cents. Since the standard error was 22 cents, the difference in costs between the lands of the two agencies was not deemed significant.

It was also determined that the difference of $1.56 per AUM between private lands and public lands was too large. The private land leases were smaller in AUM's than public land permits. After adjustment was made for this cause of cost variation, the difference in costs between private lands and public lands was reduced to $1.26. (19) Significant differences probably exist also for sheep, but the variations were so great that no generalizations could be made from these data. The Committee concluded that the grazing cost data do not provide a basis for establishing differential fees between cattle and sheep. (20) As a consequence, an overall weighted average figure for cattle and sheep of $1.23 has been used as the differential between costs on private and public lands for combined cattle and sheep operations. The $1.23 average was arrived at by using the average difference between private and public land of $1.13 for sheep and of $1.26 for cattle. These averages were weighted by the numbers of sheep and cattle.

Various estimates have been made of the loss to current owners which would be sustained by them if fees equal to the full capitalized value of the privileges were established. Dr. Darwin B. Nielson of Utah State University estimated that the total capitalized value of permits for Utah were $5.7 million for sheep ranches and $7.3 million for cattle ranches. (17) If this entire value from public land were captured by grazing fees, the capital value of the permits would decline to zero. In this event, a capital loss in Utah of approximately $13 million would be sustained by the cattle and sheep industry. An individual who secured the permits free of charge, it may be argued, had received a windfall gain for which he had made no payment. If this windfall were now recaptured, no serious loss would be sustained by him.

The study conducted in San Juan County, Utah, 14/ showed that 52.5 percent of the public land permittees acquired their property from unrelated previous owners, that 66.7 percent of the transfers of permits which occurred since 1953 were acquired from non-related previous owners, and that 45.8 percent of the ranchers had purchased or sold permits after that date. Since there is a strong presumption that property obtained from non-relatives was acquired at the full market value, 50 percent (22) of the capital value of $13 million, or $6.5 million, was purchased at full market value. In addition, a portion of the property acquired from relatives would ordinarily involve a monetary consideration in buying out other relatives in the case of inheritance. (17)

The U.S. Forest Service study submitted to Congressman Wayne N. Aspinall on November 12, 1968, states:

> "To obtain possession of a permit to graze livestock of U.S. Forest Service land, qualified ranchers must purchase the base property and/or livestock from a current permit holder. Ordinarily, they must pay a premium to the permittee for the permit. An estimated 85% of current permit holders have been acquired in this manner from the original permit holder. Thus, most permittees have paid a monetary value for the permit. Only about 50% of the $178 million value estimated as the value of U.S. Forest Service permits at current prices, however, is accounted for by the monetary payments, the remaining 50% was accrued through value appreciation over time. The livestock industry has taken the position that a new fee equivalent to the full user-cost difference would be requiring most of the present permittees to pay twice for the privileges of grazing public lands." 15/

The eight-county survey accomplished in this study 16/ shows that in the western states as a whole, approximately 60 percent of all the ranches owned by permittees was acquired from non-related individuals and 37.8 percent from relatives; in other words, 97 percent of the ranches were acquired from sources other than the Government. The proportion of the land acquired for which payment for grazing privileges was made at their market value is unknown. However, the current owners rely upon federal grazing land for 28.4 percent of their AUM's of grazing. One estimate of the total capital value of grazing permits in the western states for 1966 is $280,377,060, exclusive of National Grasslands and Land Utilization Project lands. 17/ Of this capital value, around 60 percent represents purchases at some market price. Approximately another 20 percent to 25 percent represents purchases at some indeterminate price from relatives. It seems fair to say, therefore, that 75 percent, or $285 million, represents the value of privileges which have been purchased and would be lost to the users if full cost differentials were charged for the grazing fees. Those ranchers who purchased privileges in recent years, of course, would lose their entire capital investment in these privileges.

14/ See Table VII-56 in Appendix Chapter VII.

15/ U.S. Department of Agriculture, "Studies, Alternatives, and Recommendations on the Forest Service Grazing Fee Issue." A Report to Congressman Wayne N. Aspinall, November 12, 1968, p. 5.

16/ See Table III D-70, Chapter III, p. III-96.

17/ Estimated from public land AUM privileges; see Appendix Table VII-10 and value of privileges from Chapter III, Section E, Tables 3 and 4.

In addition to the loss in capital value, the ranchers face the danger of losing income. It is stated above that the grazing fees comprise only a small fraction of the costs of ranching. Such a statement creates a false impression. Very few ranches in the entire West actually show a net profit if an adequate charge is made for the labor of the operator and his family and for interest on his investment. Using the W-79 material presented above, an increase in the fee to the full user cost differential could have the effects noted below.

In the Western region as a whole, a rancher with 200 animal units would produce, on the average, 300 pounds of meat (in this case beef) for each animal unit. He would have received, on the average, $24.80 per hundredweight, or $14,880. His costs would be $24.86 per hundredweight, or $14,916. From this, his net loss prior to 1969 would be $36.00 after paying wages to himself and his family.

Earlier in this chapter, the average U.S. Forest Service fee in 1968 was indicated as being 51 cents per AUM, and 33 cents per AUM for the Bureau of Land Management. From Table VII-19, page VII-42 in Appendix Chapter VII, the amount of forage furnished by the U.S. Forest Service in 1966 can be shown as 8,481,000 AUM's, and by the Bureau as 14,385,000 AUM's. Using these figures as a basis for calculating the overall average fee, it comes out to be 40 cents. When the full fee is reached in accordance with the new formula, it will be $1.23 per AUM. This is an average increase of 83 cents per AUM.

The average rancher above with 200 animal units will use public forage for 3.3 months. This is a total of 660 AUM's of public forage or 27.5 percent of the total AUM's required for the entire ranch. This last percentage compares with 29.4 percent required by the permittees responding to this study's Eight County questionnaire. 18/ The rancher's added cost for the public forage would then be 660 x $0.83 or $548. This added average fee for the entire Western area would, therefore, reduce an "average" cattle ranch from a near breakeven point to a loss of about $600. Another way of looking at this is that the "average" rancher would have to increase his operation by about seven animals to pick up the difference in fee after paying wages to himself and his family. On a 200 animal-unit operation, this is equivalent to about 3.5 percent.

18/ See Table III D-7, Chapter III, facing page III-96.

Nielson's study referred to above, shows that on Utah sheep ranches a move to the full user cost differential would cause a loss in income over current costs of from $387 per year on ranches with 814 ewes to $2,836 per year on ranches with 5,370 ewes. On the Intermountain cattle ranches in Utah, such a program in one market area would cause a loss in annual income of from $90 to $374 per year respectively on ranches varying in size from 50 cows to 300 cows, and in a second market area, of from $154 to $646 per year on ranches of the same size. In the Mountain area, only two sizes of ranches were analyzed; a 48-cow ranch and a 150-cow ranch. On the 48-cow ranch the annual increase in costs would be $119 and on the 150-cow ranch, $263 in one market area, and $203 and $454 annually on ranches of the same size in a second market area. (18)

Income Effects on the Local Communities

One of the functions of price is income allocation; the determination of an equitable distribution of the income derived from the land between the Government as landlord and the individual as supplier of labor, capital, and management. In the past, the Government has moved in the direction of allocating as much as possible of its resource assets to the individual. In doing so it has created external economies which have yielded revenue indirectly to the Government through the growth and development of the country. The indirect returns have been recognized as providing more abundantly for government needs than would have been realized by optimizing its ownership income. (7)

What was the nature of the indirect returns? These returns were the result of the development of the economy through the use of the resources. It was the western lands and the agriculture which developed around them, the mineral discoveries and the ferrous and non-ferrous smelting plants, the ore and steel ingot plants, the oil industry and its derivative industries that developed the West. It was the intensive and extensive development that occurred in the United States during the 19th and 20th centuries which created the vast income structure of this country from which the revenues for governmental purposes are generated.

In recent years considerable interest has been centered in the analysis of the economic structure of the nation, states, and communities. The purpose of such analysis, usually in the form of an input-output study, has been to analyze the interdependence of the economic activity within the entire economic area. By this type of analysis both the direct and indirect effects of changes in business activity in any one sector can be assessed as to its impact on the entire economy of the study area.

It is recognized that the most complete and mathematically sophisticated type of interindustry economic analysis is the input-output study. This procedure, however, is very costly and time-consuming and for this reason a study in such detail in the eight counties selected for intensive study was not feasible. The approach used in the eight-county study was a less ambitious type of analysis. Net income figures were used rather than transactions, which are more of the nature of gross sales figures. As a consequence, the multiplier effects that need to be used are much higher than encountered in the regular input-output matrix.

A detailed description of the method used to estimate the net incomes of the eight counties, and the associated multiplier, is given in Chapter III, Section D, beginning on page III-97, and in Appendix Chapter VII, Section D. This description will not be repeated here. However, a few comments concerning counties as economic units are in order. The difficulty with using counties as economic units is that they vary greatly as to the degree of dependence on basic industries within the county alone. Some counties may include large trading centers which serve several other counties, while other counties may not have a single important trading center within their boundaries. Another problem is to assess the full impact of tourism and recreation. In Elko, Nevada, for example, the service industries alone had a net income of $50 million. This was obviously due for the most part to gambling and the trade it generated. How much should be attributed to gambling and how much to county agricultural industries is difficult to determine. The location of a prison in Graham County, Arizona, and of an air base close to Roswell in Chaves County, New Mexico, present equally difficult problems. A university, or a military academy, as in Chaves County, generates income not only through salaries and wages of the staff but from expenditures for the support of the students.

With these difficulties in mind, it was decided in this study to use an average multiplier to assess the impact of the range livestock industry on the local community. A figure of 2.5 was decided upon. This figure is a little higher than the input-output studies of counties and trading areas listed in studies described in Chapter III, Section D. However, it is about the same as that for the income analyses cited in that section, and somewhat lower than the 3.0 figure which the University of Idaho has been using in a current study of counties which have no great amount of tourism or other outside sources of income.

As pointed out several times previously, one of the objectives of the land agencies, especially of the U.S. Forest Service and the Bureau of Land Management, was to stabilize the communities dependent upon the public land enterprises. All agriculture is subject to great instability from weather and prices. The range livestock industry is subject to two other instabilities which in turn affect the ranching communities. These instabilities are (1) the reduction in privileges or the withdrawal of land from grazing for other uses, and (2) the increase in fees or price of the federal range.

The fees prior to 1969 affect the rancher by decreasing the income he will have to spend in purchases of ranch inputs, on investments in his ranch enterprise, including improvements on the public range, and on expenditures for family living expenses. The impact of these fees on the eight counties surveyed are shown in Table IV D-14. These figures relate to the net personal incomes by source for the counties as shown in Table IV D-15.

In Table IV D-14, it will be observed that in Lemhi County the U.S. Forest Service currently has issued permits for 37,710 AUM's for cattle and 21,060 AUM's for sheep. The county average fee rate for cattle was 38.5 cents per AUM and for sheep 14.6 cents per AUM, making a sub-total figure for fees collected in 1966 for grazing on U.S. Forest Service lands of $14,520 for cattle and $3,070 for sheep, or a grand total of $17,590. The Bureau of Land Management has issued privileges currently for 68,390 AUM's and collected fees at 33 cents per AUM for a total of $22,570. The total fees collected from Lemhi County amounted to $40,160. From this figure must be deducted 25 percent of the U.S. Forest Service fees which reverts to the county in lieu of taxes, and approximately 8.4 percent of the Bureau of Land Management fees which are given to the counties for the same reason. This amounts to $4,400 for the U.S. Forest Service and $1,900 for the Bureau of Land Management. If it is assumed that the portion of the fees collected and returned to the county has approximately the same multiplier as rancher income on the county, the net withdrawal of purchasing power for the county in 1968 was $33,870. Using a multiplier of 2.5 as the probable impact on the county through the direct and indirect effect of lowering ranchers' purchasing power, the full impact of the grazing fees on Lemhi County would be $84,670. This loss compares with an estimated net personal income for Lemhi County in 1964 of $8,330,575 as shown in Table IV D-15.

If it is assumed now that the rates for grazing fees are increased to their full cost differential, as present policy of the U.S. Forest Service and Bureau of Land Management proposes to move to within the next ten years, the fees will be increased to $1.23 per AUM for both cattle and sheep on both U.S. Forest Service and Bureau of Land Management land. These figures are shown in Table IV D-16. In Lemhi County the fee per AUM on U.S. Forest Service land will be increased 84.5 cents for cattle and 108.4 cents for sheep. This will increase fees collected by the U.S. Forest Service for cattle by $31,870, and for sheep by $22,820, a total increase by the U.S. Forest Service of $54,690. The Bureau of Land Management fees will increase by 90 cents, a total increase in Lemhi County of $61,550. The total fees collected from the county in addition to current fees will amount to $116,240. From this amount, a total of $18,840 will be returned to the counties in lieu of taxes. Thus, the net addition taken from the counties' net personal income would be $97,400. Applying the multiplier effect of 2.5, the impact of increase in fees on Lemhi County would be $243,490. The impact on the remainder of the eight counties is calculated in a similar manner and are shown in Table IV D-16.

The actual impacts of the grazing fees on the counties were somewhat surprising. These impacts turned out to be influenced in an important manner not only by the percentage of the net personal income that is attributable to livestock, but also by the relatively high U.S. Forest Service fees prior to 1969 for cattle and the very low fees for sheep. This combination of influences was comparatively minor on all counties in 1968. Lemhi County was the highest at 1 percent. Chaves and Baker Counties were the lowest at 0.2 percent and 0.3 percent respectively. All the rest varied from 0.6 percent to 0.8 percent.

TABLE IV D-14

ESTIMATE OF FEES COLLECTED IN THE EIGHT SURVEYED COUNTIES, 1968 FEES
(DOES NOT ALLOW FOR FREE USE OR MINIMUM PAYMENTS)

1968 Fees	Unit	Lemhi County, Idaho	Chaves County, New Mexico	Johnson County, Wyoming	Elko County, Nevada	San Juan County, Utah	Graham County, Arizona	Baker County, Oregon	Blaine County, Montana
USFS									
Cattle & Horses									
AUM's	AUM	37,710	10,570	19,470	133,710	30,390	42,690	34,550	
Fee AUM	Cents	38.5	37.6	77.0	49.0	59.5	40.3	59.5	
Revenue	Dollars	14,520	3,970	14,990	65,520	18,080	17,200	20,560	
Sheep									
AUM's	AUM	21,060	24,370	14,890	374,820	4,120		12,650	
Fee AUM	Cents	14.6	7.3	14.6	9.1	10.3		9.7	
Revenue	Dollars	3,070	1,780	2,170	34,110	424		1,270	
Total USFS	Dollars	17,590	5,750	17,165	99,630	18,510	17,200	21,790	
Payments to Counties a/	Dollars	4,400	1,440	4,290	24,910	4.630	4,300	5,450	
Net USFS Income Effect	Dollars	13,200	4,310	12,870	74,720	13,880	12,900	16,340	
BLM									
Cattle & Horses									
AUM's	AUM	68,390	264,040	74,770	648,190	92,190	83,060	48,290	b/ 31,720
Fee AUM	Cents	33.0	33.0	33.0	33.0	33.0	33.0	33.0	b/ 33.0
Revenue	Dollars	22,570	87,130	24,670	213,900	30,420	27,410	15,930	b/ 10,470
Sheep									
AUM's	AUM								c/ 39,380
Fee AUM	Cents								c/ 57.0
Revenue	Dollars								c/ 22,450
Total BLM	Dollars	22,570	87,130	24,670	213,900	30,420	27,410	15,930	32,910
Payments to Counties d/	Dollars	1,900	7,320	2,070	17,970	2,560	2,300	1,340	2,770
Net BLM Income Effect	Dollars	20,670	79,810	22,600	195,930	27,870	25,110	14,600	30,150
Total USFS & BLM Net Income Effect	Dollars	33,870	84,130	35,470	270,650	41,750	38,010	30,940	30,150
Net Impact on County e/	Dollars	84,670	210,320	88,690	676,640	104,370	95,030	77,340	75,370
1964 Estimated Net Personal Income	Dollars	8,330,575	103,327,476	11,639,052	103,357,830	16,055,598	20,372,251	27,312,925	12,435,616
% Impact on Economy (Fees) To County Income	Percent	1.0	0.2	0.8	0.7	0.7	0.4	0.3	0.6

Note: Footnotes appear on following page.

TABLE IV D-14, Continued

a/ Twenty-five percent of the total fees collected are returned to the county.
b/ Grazing Districts.
c/ Land Utilization Project
(25% of the total fee goes to the county on LU land.)
d/ 8.4 percent of the total fees collected are returned to the county.
e/ Multiplier 2.5

Source: AUM - Grazing permit issued 1968 from Bureau of Land Management district office and ranger's office in each county.
Forest Service Fees - Calculated from table of fees from U.S. Forest Service.
Bureau of Land Management Fees - From Public Federal Register.

TABLE IV D-15
(same as III D-73)
NET PERSONAL INCOME BY SOURCE EIGHT SURVEY COUNTIES, WESTERN REGION
1964

Direct Income / Major Source	Lemhi County Idaho	Chaves County New Mexico	Johnson County Wyoming	Elko County Nevada	San Juan County Utah	Graham County Arizona	Baker County Oregon	Blaine County Montana
Livestock Income	1,972,080	8,894,000	2,598,010	5,719,000	1,090,472	2,530,000	3,589,872	2,743,042
Other Agriculture Income	818,218	6,757,080	183,990	340,000	300,528	2,943,000	991,128	2,813,958
Mining	56,159	5,230,378	919,188	895,922	4,579,089	123,313	354,324	17,722
Construction	91,880	7,004,352	972,088	5,206,621	1,652,626	570,703	1,236,012	438,397
Food Processing	75,330	2,866,560	-	161,521	66,503	463,232	251,257	19,955
Lumber	657,700	87,215	207,895	-	355,020	-	3,060,101	-
Other Manufacturing	115,500	3,886,740	85,703	402,125	129,935	576,656	1,138,084	131,069
Transportation, Communication, and Utilities	152,700	4,885,576	286,691	1,746,331	1,438,522	592,902	1,217,770	136,846
Wholesale & Retail Trade	1,100,240	16,453,259	1,019,666	8,164,897	881,078	2,708,506	4,284,903	1,591,155
Finance, Ins., Real Estate	124,888	4,950,459	203,123	1,001,039	165,999	384,769	725,437	322,909
Service & Misc.	272,212	6,131,653	345,743	59,199,710		1,337,909	1,289,230	172,217
Medical & Legal Services	111,000	1,527,500	209,000	894,000	134,000	170,000	450,000	700,000
County & Local Salaries	650,313	2,085,542	2,127,581	3,955,835	447,131	2,137,334	2,544,559	1,024,248
State Employees	147,400	3,231,121		1,700,086	1,535,886	1,342,000	534,581	17,700
Federal Employees	720,600	12,345,770	205,000	881,760	670,111	845,666	556,440	190,795
Property Income	1,060,008	10,876,576	1,872,736	10,741,993	2,043,929	2,625,980	3,711,358	1,496,402
Transfer Payments	706,672	7,543,432	805,276	5,055,055	1,156,433	1,572,243	2,222,370	897,841
Less: Personal Contributions	231,027	2,806,858	402,638	2,708,065	591,664	551,958	844,501	278,640
Personal Income Total	8,330,575	103,327,476	11,639,052	103,357,830	16,055,598	20,372,255	27,312,925	12,435,616
Percent Livestock Income	24	9	22	6	6	12	13	22
Percent Total Agricultural Income	36	15	24	6	7	27	17	45

TABLE IV D-16

IMPACT OF NEW FEE LEVEL ON EIGHT SURVEYED COUNTIES AFTER 10 YEARS

After New Fee Level	Unit	Lemhi County, Idaho	Chaves County, New Mexico	Johnson County, Wyoming	Elko County, Nevada	San Juan County, Utah	Graham County, Arizona	Baker County, Oregon	Blaine County, Montana
USFS									
Cattle & Horses									
AUM's	AUM	37,710	10,570	19,470	133,710	30,390	42,690	34,550	
Fee Increase/AUM	Cents	84.5	85.4	46.0	74.0	63.5	82.7	63.5	
Revenue Increase	Dollars	31,870	9,020	8,960	98,950	19,300	35,300	21,940	
Sheep									
AUM's	AUM	21,060	24,370	14,890	374,820	4,120		12,650	
Fee Increase/AUM	Cents	108.4	115.7	108.4	113.9	112.7		113.3	
Revenue Increase	Dollars	22,820	28,200	16,140	426,920	4,640		14,330	
Total USFS Increase	Dollars	54,690	37,220	25,090	525,870	23,940	35,300	36,270	
Increase of Payments to Counties [a]	Dollars	13,670	9,310	6,270	131,470	5,990	8,830	9,070	
Net Increase USFS Income Effect	Dollars	41,020	27,920	18,820	394,400	17,960	26,480	27,200	
BLM									
Cattle & Horses									
AUM's	AUM	68,390	264,040	74,770	648,190	92,190	83,060	48,290	[b] 31,720
Fee Increase/AUM	Cents	90.0	90.0	90.0	90.0	90.0	90.0	90.0	[b] 90.0
Revenue Increase	Dollars	61,550	237,630	67,290	583,370	82,970	74,750	43,460	[b] 28,550
Sheep									
AUM's	AUM								[c] 39,380
Fee Increase/AUM	Cents								[c] 66.0
Revenue Increase	Dollars								[c] 25,990
Total BLM Increase	Dollars	61,550	237,630	67,290	583,370	82,970	74,750	43,460	54,540
Net Payment Increase to Counties [d]	Dollars	5,170	19,960	5,650	49,000	6,970	6,280	3,650	4,580
Net Increase BLM Income Effect	Dollars	56,380	217,670	61,640	534,370	76,000	68,470	39,810	49,960
Total Increase USFS & BLM Net Income Effect	Dollars	97,400	245,590	80,460	928,770	93,950	94,950	67,010	49,960
Net Impact Increase on County [e]	Dollars	243,490	613,970	201,150	2,321,920	234,890	237,380	167,530	124,890
1964 Estimated Net Personal Income	Dollars	8,330,575	103,327,476	11,639,052	103,357,830	16,055,598	20,372,251	27,312,925	12,435,616
% Increased Impact on Economy to Co. Income	Percent	2.9	0.6	1.7	2.3	1.5	1.2	0.6	1.0
% Total Impact on Economy to Co. Income	Percent	3.9	0.8	2.5	3.0	2.2	1.6	0.9	1.6

TABLE IV D-16 , Continued

a/ Twenty-five percent of the total fees collected are returned to the county.
b/ Grazing Districts
c/ Land Utilization Project
(25% of the total fee goes to the county on LU land.)
d/ 8.4 percent of the total fees collected are returned to the county.
e/ Multiplier 2.5

Source: AUM - Grazing permit issued 1968 from Bureau of Land Management district office and ranger's office in each county.
Forest Service Fees - Calculated from table of fees from U.S. Forest Service.
Bureau of Land Management Fees - From Public Federal Register.

When the whole of the new fee is applied, the combination of influences mentioned results in a total impact on the economy of Lemhi County equal to 3.9 percent. Surprisingly, the second largest impact would be on Elko County. Largely because of the sheep on U.S. Forest Service land and the cattle on Bureau of Land Management land, the additional impact on the county would be $2,321,920. The total impact would be an important 3.0 percent. Johnson County would be 2.5 percent and San Juan County 2.2 percent. The impact on Chaves and Baker Counties would be relatively unimportant, both being less than 1 percent. Graham and Blaine Counties would feel some pinch at 1.6 percent.

That stability of the local community can be attained by pricing policies of the land agencies with respect to grazing lands is questionable. It is certain that any reduction in privileges, or any significant increase in fees, will put the smaller ranches in a still more precarious position than they are at present. The impact on the local community through the multiplier effect would also be substantially greater with an increase in fees. The small local community, however, is in trouble anyway. Farms generally are becoming larger and more specialized. The opportunity for diversified agriculture of the type in existence when the federal land agencies first began to administer lands has disappeared. For instance, very few of the ranch communities now have their own milk distributing plants. With the disappearance of these plants went the opportunity of many ranchers to supplement their incomes by keeping dairy cows. Poultry is now a mass production industry and small farm flocks also have nearly disappeared. With the decrease in number of farms, there is a tendency for the small local trading center either to disappear or to shrink in size relative to the larger trading center.

The best way out of the instability problem for the livestock industry appears to be for ranches to grow larger. Such a trend, of course, means fewer ranchers. With fewer ranches and farms, the very small agricultural communities will tend to decrease in population. This has taken place in other sections of the country and it will occur also in the West. In a recent article, Karl Fox stated: "Galpin conceptualized the functional community of 1911 as one (implicitly) comprising 2,000 to 4,000 people. The 'functional community' of 1968 contains about 100,000 to 500,000 people. If we want to serve the community in addition to serving commercial agriculture, we must learn to work with communities of the size indicated. These communities include farm and non-farm residents indiscriminately." 19/

Since it is impossible to stabilize both the range livestock industry and the local community, it would be best for the land agencies to concentrate on the livestock industry itself. As pointed out above, fees set at

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19/ Fox, Karl, "Agricultural Policy in an Urban Society," American Journal of Agricultural Economics, vol. 50, No. 5, December 1968, p. 1141.

any rate within the limits of the cost differentials will probably not bring about the establishment of efficient farm units, unless the decrease in income of the smaller ranches forces them out of existence more rapidly than otherwise. The experience in agriculture generally over the past two decades has demonstrated that the forcing process of low incomes is not only brutal but also uncertain. The wrong people tend to be forced out. A more successful procedure would be to let the pull of the market bring this about, rather than the goad of poverty. (3)(9)(12)(13) This would require that the agencies eliminate all impediments to market allocation of privileges, including such factors as limits on the number of animal units that can be grazed by one rancher on forest lands, the emphasis on dependency and commensurability, and any tendency to vary fees to favor the small operator over the larger one. It would also seem to favor an expansion of the land management and development relationship between the agencies and the ranchers. For instance, with a better system for classifying land, a longer term, more businesslike relationship between the Government and the rancher could be developed. This business relationship might let the Government set the rules under which the land could be developed to the point where marginal costs equal marginal returns, based primarily on the rancher's investment rather than the Government's. At the very least, it would seem to require that a system be devised whereby the ranchers showing ability could invest more of their own capital to improve the land and raise additional feed which would be available to them for feeding additional livestock.

Impact of Fees on Stability of the Supply and Price of Meat

No complete analysis of pricing policies can be made without assessing their effects upon the regional and national economy. What is the nation's stake in the forage industry based upon public lands concentrated in the Eleven Western States?

From the standpoint of national interest, the production of meat, especially beef, is of considerable importance. (14) Robert R. Nathan Associates estimate that consumption of beef at the medium level projection will jump from 19 billion to 30.3 billion pounds by 1980, an increase of 60 percent. By the year 2,000 it will rise to 54.7 billion pounds, an increase of 188 percent. Therefore, factors affecting the supply and cost of beef are of concern to the public generally. Pricing policies of the federal land agencies can influence the supply of meat in two respects: first, their pricing policies can affect the cost of production of meat; and second, through the impact of costs on the ranch firm, these policies may affect the amount of improvements in range lands and in this way the total supply of meat.

Estimates of the degree of dependence on the range for the supply of meat in the United States are somewhat sketchy at best. From the figures supplied to the Public Land Law Review Commission by the federalland agencies it was estimated that in 1966 in the Eleven Western States all the federal lands supported 22,653,000 AUM's. 20/ This was 12.1 percent of the total AUM requirements of domestic foraging animals in that year in the West. If the public grazing lands were improved to their possible supply, their carrying capacity could be expanded to supply 19.4 percent of the total requirements or 40,689,000 AUM's.

In the United States as a whole public forage lands accounted for 3 percent of the total supply of forage for the year 1966. If range improvements were expanded, this percentage could be increased to 4.6 percent of the total meat supply for that year. The forage provided the requirements for 2.6 percent of the beef and for 9.5 percent of the lamb and mutton. 21/ The figures above show increased supply if the public range is improved with "intensive improvement practices." What "intensive" means here is not exactly understood. However, both the U.S. Forest Service and the Bureau of Land Management refer consistently to production at the sustained yield level. If "intensive improvement" means only to the sustained yield level, then the public lands could be made to yield a good deal more forage if only part of the land were managed "intensively to the marginal return level." This issue is discussed in more detail in Section B of this chapter.

The above figures were in terms of AUM's of public forage only. Since cattle and sheep ranches represent a combination of both public and private grazing land, it cannot readily be concluded that only 12 percent of the supply of meat in the western states and 3 percent in the country as a whole would be affected by the pricing policies of the federal land agencies. A pricing policy adversely affecting the public forage land utilized by a rancher may cause the entire ranch enterprise to become uneconomical, and this then will affect the cost of producing all the animal units on the ranch. For example, the Eight-County Survey revealed that the permittees on the public grazing lands secured only 29.4 percent of their total AUM requirements from that source. A pricing policy which would increase the costs of that 29.4 percent of the AUM's would affect the cost of all the animals produced on those ranches. (27)

While the above estimates indicate that the nation as a whole is somewhat independent of the public lands from the standpoint of production of beef and lamb, the same cannot be said of the West. This area is greatly dependent upon the grazing lands for meat animals. Contrary to most beliefs, the West does not produce a surplus of beef and veal. During the five-year period, 1962-66, the Eleven Western States overall showed a deficit in beef and veal production over consumption for each year of that period. The amount of the deficit varied from 138,414,000 pounds in 1963 to 283,540,000 pounds in 1966. Lamb and mutton were in surplus supply for the West overall. This surplus varied from 52,640,000

20/ See Chapter III, Table III B-49, p. III-56.

21/ See Chapter III, Section B, p.55.

pounds in 1963 to 81,920,000 pounds in 1965. However, California had a deficit in 1966 of 80,752,000 pounds, Washington had a deficit of 11,404,000 pounds, and Arizona had a deficit of 650,000 pounds. 22/

A pricing policy that would increase the cost of producing cattle and sheep on the public lands could adversely affect the cost of meat in the Western region. It should be noted, also, that a change in the fee rate would have the same effect as a tax increase and would be born by the permittees as an increased cost of operation. However, since the livestock ranchers who use public grazing are a minority of all livestock producers, the fee would not necessarily affect the marginal producer and thus be passed on to the consumer in the form of higher costs of meat. The more likely situation is that at least most of the increased cost will be born by the property owners who depend upon the range lands, and will not be passed on to consumers in the form of increased prices.

The Effect of Fees on Stability of Investments in Range Improvements

Probably more important to the supply and price of meat than the cost effects of the increase in fees on the range lands, would be the effect of the increase in fees on the ability of the ranchers either to finance improvements on range lands themselves, or to cooperate with the Federal Government in making such investments in improvements. On this point, the U.S. Forest Service made the following statement:

> "It is likely that an increase in grazing fees will cause a decline in cooperative work. Presently, U.S. Forest Service range permittees contribute $1.3 million a year in the installation, construction, and maintenance of Federally owned range improvements. If cooperative work declines, the Federal government will bear the burden in some combination of the following ways: (1) increased appropriations for the necessary range improvement construction and maintenance; (2) decline in value of Federally owned land due to deteriorating range land and watersheds; and, (3) declining or lowering fee collections due to decreases in capacity and use." 23/

In addition to the private expenditures by the permittees on U.S. Forest Service lands, those on Bureau of Land Management lands contribute another one-half million dollars to range improvements and maintenance. 24/ It is to be expected that ranchers who cannot cover their entire costs on their operations will have to make up the loss either by decreasing their living expenses or by cutting down on their operating expenses. Experience in all farming sectors has been that when farm incomes decline, as during periods of depression, farmers tend to cut back first on investments in and improvements on farm lands. (10) In this connection, B. Delworth Gardner made the following statement:

> "As permits have been cut and because livestock people expect the trend to continue, security of grazing tenure has been reduced. Investment in range improvement that would have been undertaken under more optimistic tenure expectations has been curtailed. Rancher investments have declined sharply on the forest. In 1957 the rancher share in cooperative range improvement projects with the government was only 6% of the rancher share in 1949. Over the identical time, the rancher share of the Bureau of Land Management district, where little or no cutting has occurred, increased by 327%. There can be little question perpetual grazing would tend to augment range management and investment in range improvement by the rancher." 25/

If this was the result of a decrease in privileges, a similar occurrence would certainly follow an increase in fees, which would also decrease the rancher's income.

Stability of Tenure

In the previous section it was pointed out that stability of tenure was a goal of the federal land agencies as a means of attaining stability of the livestock industry and of the local communities. Commensurability requirements, emphasis on family farms, limitation in numbers of permits, prevention of monopoly, and ability to transfer privileges to other owners possessing the specified qualifications were among the means by which stability was to be maintained.

Economic stability, in the sense of a decrease of failures or bankruptcies among public land users, would be hard to measure. If measured, it would be difficult to attribute the stability to specific public land policies. During the period since 1940, there has been a general trend upward in livestock prices. Even the beef cycle 26/ has been of shorter duration and of less amplitude. Such evidences of stability can more properly be attributed to the secular increase in incomes and in the preference for beef in the diet rather than pork, lamb, and veal. (15) Some measure of stability can be secured, however, from the history of tenure of permittees as described in the questionnaire used in the Eight-County Survey conducted for this study.

22/ See Appendix Tables VII-41 and VII-42.

23/ U.S. Dept. of Agriculture, "Studies, Alternatives, and Recommendations on the Forest Service Grazing Fee Issue." A Report to Congressman Wayne N. Aspinall, November 12, 1968, p. 12.

24/ See Chapter III, Figure III B-23.

25/ Gardner, B. Delworth, "A Proposal to Reduce Misallocations of Livestock Grazing Permits," in Journal of Farm Economies, vol. 45, No. 1, February, 1963, p. 116.

26/ For description of the beef cycle, see Section C of this chapter, p. IV-74.

The average number of years the respondents had owned their ranches was 20.2. Of the total of 327 ranches, 157 or 48 percent had transfers of permits since 1953. Of these transfers, 102 involved the Bureau of Land Management and 55 were from the U.S. Forest Service. One hundred thirty-six of the transfers were purchases by the ranchers replying to the questionnaires and 21 were sales by these ranchers. The length of tenure in the ranches did not vary much between the eight counties. Four of the counties had an average tenure between 21.1 and 21.6 years. The shortest years of tenure were in Lemhi County in Idaho and Elko County in Nevada, both of which had an average length of tenure on the present ranches of 18.9 years.

In the more detailed interviews used in the 75 Ranch Survey, additional information was secured on tenure. In 1934, just prior to the institution of the government regulations under the Taylor Grazing Act, the owners of the ranches and their heirs comprised 32 percent of the number interviewed. About 40 percent of all ranches had their original number of privileges reduced since the acquisition of the ranches, and only 2.8 percent had increases.

Almost 40 percent of the ranchers purchased additional privileges since the ranches were acquired; most of this number, 57 percent, were for the purpose of enlarging their operation to attain economies of scale. Another 28 percent indicated that they had purchased additional privileges to balance their operations or to consolidate their holdings. Only 9 percent purchased additional privileges to compensate for reduced privileges, and 6 percent of the purchases represented family transfers.

About one-third of the ranchers interviewed rented additional private grazing lands. Approximately 64 percent of this one-third claimed that they rented their land for 33 cents to $1.50 per AUM. About 18 percent paid between $2.25 and $3.00 per AUM, but these ranchers claimed that they rented private range only intermittently.

Security in tenure and in the transfer of privileges from one generation to another tends to perpetuate the uneconomically small ranchers. The existence of this large number of very small units came about in many cases through inheritance. Had the agencies taken over the permits and distributed them with a view to providing more adequate sizes of ranch units, as the U.S. Forest Service tried to do at one time, much of the problem of the very low income farm unit could have been avoided.

Evaluation of Stability Policies on the Economy

Probably the most important current issue relating to stability is the recent change in methods of assessing fees on the public lands. The basic features of the issue were effectively stated by Edward P. Cliff, Chief, U.S. Forest Service, U.S. Department of Agriculture, in his

testimony before the Senate Committee on Interior and Insular Affairs on February 27, 1969. 27/ Mr. Cliff stated, after reviewing the findings of the Interagency Fee Study Committee,

> "In essence, we reached agreement with the livestock industry and interested groups on all issues but one in connection with the study. This basic issue turned on how to treat the capitalized 'permit value.'
>
> "Recognition of permit value as a cost of grazing on public lands for purposes of calculating fee levels as proposed by the livestock industry would tend very strongly to convert National Forest grazing privileges to grazing rights ... We recognize very clearly that the grazing fee regulations and the new fee structure will have some impacts. Our overriding concern has been to sympathetically and responsibly weigh these impacts in deciding how to implement the results of the grazing fee studies and analyses. However, I should like to point out that the impacts are the result of values which ranchers have built up among themselves. They have made no payment for the value to the real owner of the resource upon which it is based. This value has come into existence primarily because the fees which have been paid the government for the use of the resource have been less than their fair market value .... The questions which underlie the new grazing fee regulations are complex, and reasonable arguments can be made to support the many sides involved. As we see it, the issue is not whether the full market value is being paid for grazing on public lands. It is to whom it is being paid."

In Section C of this chapter, evidence was presented to show that the agencies were somewhat more involved than Mr. Cliff's testimony implied while the capital value was being built up among users. They could and probably should have exercised ownership prerogatives at the time transfers were made, to prevent such a capital value from arising. Instead, they permitted it to arise and recognized its existence by positive acts on their part. The problem for this section has been to analyze the economic impact of the change in fee assessment methods which would dispossess the rancher from this capital value over a ten-year period.

It was pointed out at the beginning of this section that all agencies recognize, or have recognized in the past, withdrawals of land from public ownership under the various homestead acts, under the reclamation program for wildlife and scenic purposes, for defense, and for protection of the watershed. All these types of withdrawals still exist. The idea expressed by Mr. Cliff in his testimony is that if the present value of the permit

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27/ See Testimony of Edward P. Cliff, p. 9 of the Testimony.

now capitalized in land values is recognized, "it logically follows that permittees could demand compensation for any portion of a grazing permit value that is no longer available to them because of U.S. Forest Service resource management actions affecting the size of the permit." In view of the continuous history of withdrawals, it would appear that this does not "logically follow."

One significant feature of withdrawals for the issue of stability is that in most cases of withdrawal, while there may be some instability created in the livestock industry itself, the ultimate effect is that it puts the land to a higher use. The effect of intensive agriculture is to induce the growth in the local communities more rapidly than would the livestock industry if the land were left in the hands of the ranchers. The same result may not occur in the case of withdrawals for recreation, wildlife, national defense, and for watershed protection. Recreation through tourists' expenditures may, however, have a greater income generating effect than cattle grazing.

Summary

The impact of the new fee on livestock firms will be depressive. The cost analysis presented in this section indicated that a rancher should have around 200 animal units in his operation if he wished to cover all of his costs, including an adequate return on his investment. With the fee in effect before January 1, 1969, the rancher of this size unit would not quite cover costs after paying himself and his family wages. After the ten-year period when the full fee increase will come into effect, a rancher of that size unit would sustain a loss on his operation of just below $600 per year. To cover his increased fee costs, he would have to expand his operation by around seven additional head of cattle.

The opportunities for a rancher to adjust his ranch size is often limited. Experience in agriculture generally has shown that the cost-price squeeze since 1952 has had the effect of causing farmers to earn less than the full costs of their operations; failing to receive either their full wages of labor or an adequate return on their investments. Since the range livestock industry is characterized by small ranchers, it is likely that an increase in fees would decrease the net earning of most of the ranchers.

The increased fee structure is also likely to discourage rancher participation in investments in improvements and to induce more exploitative ranching methods on the public range and on the private base property. Since all livestock producers will not be faced with the increase in fees, it is unlikely that the cost will be reflected in the price of meat. Its impact will be on the current user in the form of higher costs of operation and, consequently, smaller profits. Also, he will lose the capitalized value of the ranch permits. For many of the smaller ranchers with permits, the combination of the two will make their situations more difficult than they now are, and will make their circumstances for selling the property less favorable.

Like farming generally, the livestock industry has contributed to the growth and the stability of the local community. In the eight counties selected for intensive survey, the direct contribution of the livestock industry to the income of the county was over 20 percent in the case of three counties: Lemhi County, Idaho, 24 percent; Johnson County, Wyoming, 22 percent; and Blaine County, Montana, 22 percent. In Baker County, Oregon, and in Graham County, Arizona, it contributed 12 percent or more. In San Juan County, Utah, livestock ranching was overshadowed by mining; in Elko County, Nevada, by non-resource based activities indirectly associated with gambling. Chaves County, New Mexico, had by far the largest livestock and total agricultural income of all the counties. However, it was suprisingly well balanced in all categories so the overall impact remained relatively small percentage wise.

The impacts of the grazing fees on the net personal income of the counties were not large in 1968 using the old fee structure. The largest impact was on Lemhi County, Idaho, the county least able to support it. However, it was only 1.0 percent. Johnson County, Wyoming, was second high at 0.8 percent. All other counties were below this. When the new fee is applied at its maximum level, as it will be in ten years, a much more serious impact situation is observed. Lemhi County again has the highest impact. Under these conditions it will be 3.9 percent. Elko County will be second highest at 3.0 percent. Because Elko County has a net personal income total of $103,357,830, this 3.0 percent impact is the result of a net impact increase over 1968 of $2,321,920. Johnson County and San Juan County are also affected rather seriously at 2.5 percent and 2.2 percent respectively. Graham County and Blaine County will feel a pinch at 1.6 percent each. Baker County and Chaves County are still at minor levels below 1.0 percent.

The regional and national stake in the range livestock industry is limited for the most part to the effects on the supply and price of meat. As it now stands, only 3 percent of the supply of cattle and sheep is directly supplied from range forage. If the range lands were improved to their potential as estimated by the several agencies, this could be increased to 4.6 percent of the total national meat supply. Although this may seem insignificant in view of the projected increase in demand for beef and lamb, the range supply should still be considered important. It is believed that if a better system for classifying the land were devised, it is very likely that a relationship could be developed with some ranchers whereby some land could be managed more intensively to the marginal return level. This might provide a substantially increased amount of forage at little expense to the Government, while still protecting all governmental objectives and standards.

For the Western region, the supply of forage secured from the public lands amounted to 12.1 percent in 1966. If the lands were improved to the level estimated by the several agencies, they could provide 19.4 percent of the total requirement of the West for beef and lamb. In addition, the same comments above regarding development to marginal return levels apply here. This is a most important contribution of the range lands to the livestock industry of the West. Even so, it would be difficult to assess the effect of an increase in fees on the supply and price of meat. Since only a minor segment of the entire livestock industry is dependent on the range, the cost of fees would probably not be passed on to consumers but would have to be borne by the owners of the range livestock ranches.

In most cases the stability criteria to which the agencies have conformed has been attained. The range livestock industry is more stable today than previously; the family farm has been preserved. The local community has been maintained and stabilized. The important question, however, is whether or not there objectives are relevant for today and for the future.

Certainly the stability criteria used have not let to efficient allocation of resources. The family farm defined in terms of small ranch operations does not provide a sufficient income to maintain adequate standards of living. Range lands have not been developed to their fullest economic potential. Possibly some flexibility to meet changing future needs has been sacrificed.

Small local communities no longer perform the services for neighboring agriculture that they did in the past. Larger units are necessary in order to become functional communities. To provide stability for the local community through control of public land resources is probably no longer possible, if it ever was. Resource development in agriculture and in forest and mineral lands very likely will not be as directly related to community growth as it was in the 19th and early 20th centuries. (11)

Finally, the problem of rural poverty will probably not be solved by providing a large number of very small farms. This issue will become an essential one in the next half century.

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SECTION E

MULTIPLE USE
ANALYSIS OF RESOURCE USE AND CONFLICTS INVOLVING FORAGE LANDS

Introduction

Multiple use of the public lands has been a stated policy of the U.S. Forest Service since 1905 when Secretary of Agriculture James Wilson directed the Chief of the Forest Service, by letter, to:

> "... see to it that the water, wood, and forage of the reserves are conserved and wisely used for the benefit of the home builder, first of all, upon whom depends the best permanent use of lands and resources alike. ... All land is to be devoted to its most productive use for the permanent good of the whole people and not for the temporary benefit of individuals or companies.
>
> "All of the resources... are for use, and this use must be brought about in a thoroughly prompt and businesslike manner, under such restrictions only as will insure the permanence of these resources. The permanence of the resources... is therefore indispensable to continued prosperity. ... The continued prosperity of the agricultural, lumbering, mining and livestock interests is directly dependent upon a permanent and accessible supply of water, wood, and forage... (made available) under businesslike regulations enforced with promptness, effectiveness, and common sense.
>
> "Local questions will be decided upon local grounds; the dominant industry will be considered first, but with as little restriction to minor industries as may be possible." 1/

The United States Congress reinforced this policy of multiple use management on national forests with passage of the Multiple Use and Sustained Yield Act of 1960 (Public Law 86-517, 74 Stat. June 12, 1960). This Act authorized and directed that the national forests be managed under principles of multiple use and to produce a sustained yield of products and services and for other purposes.

The Department of the Interior was authorized and directed by an act of Congress (Public Law 88-607. 78 Stat. September 19, 1964) to

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1/ U.S. Department of Agriculture, Forest Service. The Western Range. 74th Cong., 2d Sess., Senate Doc. 199. 1936. 620 pages.

classify certain lands administered by the Secretary of the Interior in order to provide for their disposal on interim management under principles of multiple use and to produce a sustained yield of products and services, and for other purposes.

The definition of multiple use is essentially the same in the two Acts mentioned above and was defined as:

> The management of all the various renewable surface resources of the public lands so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

The definition of multiple use, provided by Congress, does not supply the public land agencies with specific criteria for determining or selecting land use combinations; this is left for the agency to develop. As a consequence, agency personnel are placed in the position of determining what is the greatest good for the public and what the public wants in the way of land use programs. Training, attitudes and previous experience of agency personnel influence the degree and emphasis placed on the priorities assigned to the various land use activities in the multiple use plan. Individuals and the various groups of society, according to their own perspective, place different values on the several products of the land resource. The farmer and the city dweller who depend on a flow of water from the land are critical of other uses which limit or jeopardize that water flow. Livestock ranchers may be critical of uses that diminish the forage supply for domestic animals. Conservationists and recreationists take a dim view of land use practices that despoil the natural beauty or affect the habitat conditions for wildlife species. Each of these interests exert pressure, where they can, to influence land use policy and planning.

The accomplishments of the federal agencies in administering the public lands for the people of the country has been outstanding to date in spite of the limitations of congressional directives. Increasing demands and changing desires of the citizenry about the kinds and levels of goods and services to be produced from the public lands will make the job of public land management increasingly difficult and complex. Specific guidelines and definition of goals for public land policy are needed to permit the federal agencies to manage the public land most effectively to "best meet the needs of the American people."

It is simple enough to say that specific guidelines are needed, but it is much more difficult to indicate how these guidelines should be established. It has been stated many times in many places that land use should be in accordance with public wishes and desires. Whether the public agencies are in a position, by training and experience, to properly assess the public's desires and wishes is questioned.(3) Equally questionable is whether the general public knows enough about its needs and desires to make intelligent decisions about land use through the process of public hearings or voting on land management decisions.

An analytical procedure is needed in which the advantages of alternative land use plans can be compared. Economic theory has dealt with the competitive relationships among inputs and outputs of firms for over a century. Where one factor can be substituted for another in the production of a commodity or where the same production factors can produce a number of commodities, the concept of marginal value product has been used to determine the point of optimum returns. If a given area of land is capable of producing a number of commodities and services, net public or private value of the land will be optimized at the point where the utilities derived from each of the uses will be equal to marginal inputs. This in turn will be equal to the opportunity cost of each marginal input. The greatest gain to society then will be attained when no addition of public land, for example, can be allocated for wildlife use without reducing livestock grazing to a point where the utility of the additional unit of wildlife would be less beneficial than the amount of livestock excluded from the range. In another case, it might be that an additional unit of land excluded from recreational use, because of livestock grazing, would be detrimental to the public welfare. This involves the relative demand of the public for recreation and meat.

In a situation where all the commodities and services have a market value, the marginal value product is capable of being estimated with some degree of accuracy. When many of the services are supplying collective wants, as are the public lands, it becomes difficult to determine the relative order of the wants (livestock grazing versus wildlife) and even more difficult to ascertain their marginal social value product.

Analytical procedures to allocate public land and public land resources among users and uses is further complicated when non-economic values are given consideration. Political support for agency plans and programs, aesthetic and moral considerations, such as the poverty question, all add to the complexity of managerial decisions concerning public lands.

When land use decisions involve the exclusion of one use or another, additional complications are introduced. (4) Marginal values, benefit-cost models and similar tools are of little help in deciding whether grazing should be excluded as a land use because of wilderness or other recreational values. Such decisions involving exclusionary uses produce major conflicts in public land use programs.

Even on public lands where many uses may be combined, conflicts arise. Each segment of the public concerned with land use finds multiple use as a competition for emphasis, for status, for tenure, for preferred treatment and for prior access to the public purse in that interest. (7) This is well illustrated by statements, appearing in newspapers and elsewhere, of wildlife and conservation groups over the recent fee increase on public lands.

Some of the conflicts, revealed in this study, between the use of the public land for livestock grazing and other types of land use are presented below.

Grazing and Watershed Protection Conflicts on Public Lands

Most of the conflicts over domestic livestock grazing and watershed protection arise in the mountainous areas of the public lands. These areas, largely administered by the U.S. Forest Service, receive moisture which is channeled into the streams and rivers of the nation. The amount and manner in which water flows from the watersheds is influenced by the kind and amount of vegetation cover.

Grazing is generally not incompatible with water production and conservation if it is properly regulated. There are areas, however, with limited soil development or soils so erosive, because of steepness and texture, that grazing is not permitted. In recent years, the U.S. Forest Service has been reducing and eliminating sheep grazing from the steep granitic slope areas of Idaho, Montana and other states. Grazing has also been excluded from some range-watershed areas because of a deteriorated plant cover. When the vegetation cover is restored to a level adequate for watershed protection, these areas may be returned to grazing use.

The possible detrimental effect of improper livestock grazing on watershed values has resulted in protective directives by both the U.S. Forest Service and the Bureau of Land Management. 2/ The Forest Service provides specifically that:

(1) Watershed areas may be closed to livestock grazing when necessary to prevent accelerated erosion, floods or the diminution of usable-yield or pollution of the water supply;

(2) Areas suitable to grazing will not be used if it requires moving livestock over watersheds which will be damaged by livestock use;

(3) Grazing use will be planned to prevent trampling damage on watercourses, alpine meadows, and snowbank areas;

(4) Water pollution resulting from livestock grazing will be prevented;

(5) Watershed protection and improvement will be considered in all range improvement projects.

The Bureau of Land Management recognizes that good range management usually results in good watershed management. The regulations of this agency also state that a watershed may be closed to the grazing of livestock when necessary to reduce accelerated erosion, increase water yield, or prevent water pollution.

2/ Forest Service Manual: 2205.13. Bureau of Land Management Manual: 4112.11A2.

Between 1947 and 1966 grazing was excluded from about 4.1 million acres of public land for watershed protection. About 97 percent of this land is administered by the U.S. Forest Service and 2.5 percent is administered by the Bureau of Land Management. During the same period, 149 thousand acres of land valuable for watershed purposes was restored to grazing use. The net acreage of public land from which grazing was excluded between 1947 and 1966 is about 3.9 million acres and 99 percent of this is found in the Eleven Western States.

The largest areas on which grazing has been excluded for watershed protection are found in those states with large amounts of mountainous area. Almost three-fourths 3/ of the range-watershed land on which grazing has been excluded is found in the states of Colorado, Idaho, New Mexico and Utah.

Since good grazing management is generally not detrimental to watershed values, conflicts are not great between livestock people and the agencies over watershed protection. There have been questions, however, as to the necessity of excluding livestock from some watershed areas.

3/ Table III A-9, Chapter III, Section A, p. III-20.

Conflicts over Grazing and Recreational Use of the Public Lands

Livestock grazing and recreational use (other than hunting and fishing) will probably be one of the major areas of conflict in the use of the public lands. Outdoor recreation involves more people than any other public land use activity and the recreational visits to the public lands are growing at an astounding rate. Data compiled by Clawson (1) showed that total visits to national forests, the national park system, and the national wildlife refuges more than doubled during the eight years from 1956 to 1964, from 115 million to 261 million. Data on the number of visits to land administered by the Bureau of Land Management are limited, but an estimated increase of about 11 million (from 37.8 to 48.5 million) recreational visits occurred between 1966 and 1967. (14)

Grazing and some forms of recreational activity are incompatible and constitute exclusionary uses. The federal agencies have withdrawn about 24 million acres from grazing for organizational campsites, camping and picnicking areas, recreation residences, resorts, historical and archeological sites, natural and wilderness areas and other types of recreation areas. 4/ Natural and wilderness areas comprise about 90 percent of the land withdrawn from grazing for recreational use whereas campsites, residences and resorts make up less than one percent of the area withdrawn.

The National Park Service administers the greatest area of land withdrawn from grazing for recreational use (22.2 million acres). Since the national parks and monuments are administered primarily for purposes other than livestock grazing, only minor conflicts arise on the public land presently designated as such. More serious conflicts develop concerning the designation of additional public land as national parks, monuments and wildlife refuges.

Withdrawals by the U.S. Forest Service of public land from livestock grazing for recreational use is about 1.3 million acres. The areas withdrawn are primarily scenic areas, organizational campsites, recreation residences, resorts, and historical and archeological sites. Livestock grazing is presently permitted on about 5.8 million acres of the total 13.2 million acres designated as wilderness and primitive areas by the U.S. Forest Service. About four percent of the total category of land that is suitable for grazing has been withdrawn from livestock grazing for recreational use. At present, the impact of recreational use, other than hunting and fishing, on livestock grazing on those public lands administered by the Bureau of Land Management is of minor importance in producing conflicts. These public lands do not have the attractiveness or scenic value of the public lands administered by the U.S. Forest Service.

4/ See Chapter III, Section A, beginning on p. III-20.

It would appear, because of the relatively small amount of public land withdrawn from livestock grazing for recreational use, other than national parks and monuments, that conflicts between the two types of public land use would be a minor problem. The ranchers interviewed in the eight counties 5/ in eight western states as part of this study expressed only minor annoyance or conflict with recreationists using the public lands that they graze. Motor bikes and jeeps were of greatest concern in that they would rut the roads, start erosion channels on hillsides and sometimes separate the calves from the cows. Vandalism and destruction of property by recreationists were also areas of annoyance to the livestock operator. However, much of the vandalism complained of by the ranchers was associated with hunters who are treated later in this chapter.

Ranchers expressed greater concern about the attitude of recreationists and the general public with regard to the grazing of the public lands by domestic livestock. Conservation groups have been critical of livestock grazing on the national forests since the forest reserves were set aside. John Muir in 1897, through the recently formed Sierra Club, provided organized opposition to grazing in the High Sierra wilderness. (11) This organized opposition continues to the present day and is especially critical of sheep grazing on the public lands. This reflected attitude is and promises to be a major source of conflict between recreationists and livestock operators.

Conflicts Over Livestock Grazing and Wildlife Use of the Public Lands

Conflicts between livestock and wildlife interests on the public lands have existed since establishment of the forest reserves. (11) These conflicts, at the present time, involve not only the forest reserves, but other public land administered by the several federal agencies. The conflicts focus around competition between the two groups of animals and public land access problems (5) encountered in some areas. Because of the split responsibility between the federal agencies and state agencies in managing the wildlife resource, certain conflicts between these two groups also exist.

The use of the forage resources of the public lands by wildlife species has increased sharply over the years. Livestock use authorized by the U.S. Forest Service reached a peak of 20.4 million AUM's in 1918 (1) and declined to 8.3 million in 1964 (Appendix Table VII-10). Estimates of big game use of the national forests (2) showed an increase from 1.2 million AUM's in 1923 to 7.2 million in 1964, a 523 percent increase over 1923. Game use of the national forests surpassed the use made by domestic livestock in 1961. Between 1947 (16) and 1967 (15) wildlife use of the public lands administered by the Bureau of Land Management increased from 1.2 million AUM's to an estimated 2.6 million AUM's. The 2.6 million AUM's is about 18 percent of the 14.3 million AUM's of use made by domestic livestock in 1966 (see Table III A-7).

Competition between livestock and big game animals is difficult to ascertain. The degree of competition varies by region, vegetation type, topography and the concentration of the various kinds of animals. Big game animals are prone to use the steeper and rougher areas while domestic livestock prefer the less steep parts of the range. Dietary habits of the two kinds of animals on range in good condition often do not overlap to any serious degree. There is greater competition between domestic animals and big game on ranges in poor condition because of the lack of variety of plant species. In these situations, the natural selection of animals cannot come into play to reduce competition for the forage. On the more open and level range lands, competition for forage among kinds of animals will also be greater than in areas with a greater variety of topographical features. (9)

There is evidence to indicate that livestock grazing may benefit wildlife habitat conditions (8) on the public lands and elsewhere. Balanced use of the forage resource by both domestic and wild animals may often be most productive for both big game and livestock. On ranges with mixed types of vegetation, herbaceous species increase and browse species may decline with game use alone. The converse is true with only cattle grazing. The combined grazing by the two groups of animals will maintain a better balance of browse species, preferred by game animals, and herbaceous species, preferred by cattle. Heavy livestock grazing is beneficial to irrigated pastures used by geese and other migratory waterfowl. Unless the vegetation is closely cropped, these areas are unattractive to the birds. Upland game birds may benefit from heavy grazing on mating areas. Thus, livestock grazing of the public lands probably is contributing to improved wildlife habitat conditions and increased numbers of game animals. Range development programs, particularly livestock water developments, undoubtedly make more public land useable by game animals and may be partly responsible for the increase in game numbers over the years.

There is a great deal of controversy, in some areas, over the effects of certain kinds of range improvement practices on wildlife

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5/ Blaine County, Montana; Lemhi County, Idaho; Johnson County, Wyoming; Baker County, Oregon; Elko County, Nevada; San Juan County, Utah; Chaves County, New Mexico; and Graham County, Arizona. Chapter III, Section E, p. III-102.

habitat. Sagebrush removal in large blocks through spraying or plowing is thought to be inimical to sage grouse populations. (6) Fences constructed to regulate and control livestock may interfere with game movements, especially antelope. (13) Pass-through devices, for antelope, required in the construction of fences on public land in some areas (Wyoming, Colorado, and New Mexico) pose problems for the livestock operator. These fences are more costly to build and are less effective in controlling the domestic livestock.

Although the discussion above indicates some of the sources and causes of conflicts between ranchers and wildlife groups, one of the major conflict issues stem from sportsman and rancher contacts. Livestock operators in general, as indicated by interviews in the eight county study, are sympathetic to hunting, fishing and other outdoor pursuits of the general public. This is probably because of their own interest in wildlife and nature in general. Antagonisms develop when hunters leave gates open, cut fences, damage or destroy ranch property and equipment, kill domestic livestock, litter the range area with refuse and prevent animals from drinking by camping on the water holes. About three-fourths of the ranchers interviewed in this study indicated they encountered hunters on their private lands and the public lands grazed by their livestock. The impact of hunters on livestock grazing use was mentioned more frequently than any other land use activity. However, those who considered that the severity of the limitation was from moderate to severe were no more numerous than were those who had the same viewpoint for motorcycles and jeeps. Most ranchers appreciate and some insist that hunters request permission to hunt or cross private lands in the use of the public lands for hunting or fishing. State fish and game departments are pursuing educational and other programs, such as compensation to property owners for hunter damage, to alleviate some of this conflict between ranchers and hunters.

As can be seen by the foregoing discussion, big game and domestic livestock competition for range forage is only a minor source of conflict between the two groups. Except for critical big game winter range areas, calving or reproduction areas, and habitat areas for endangered species, both domestic livestock and wildlife are permitted to graze on the public land administered by the U.S. Forest Service and the Bureau of Land Management. Only a little over 2 million acres have been withdrawn from livestock grazing by these two agencies for wildlife use (Table III A-13).

The separation of wildlife species management from habitat management creates conflicts between federal land management agencies and state fish and game departments. Development and management of the habitat for fish, game, birds, and furbearers is a responsibility assigned to the federal agencies. (12) The states insist that they retain exclusive jurisdiction over resident fish and wildlife on federal lands. If there is not regulation and control of the game herd size through cooperative agreements and efforts between state and federal agencies, conflicts with other uses develop and damage to the public land could occur.

Both the Bureau of Land Management and the U.S. Forest Service have long recognized the rights of the general public for hunting, fishing and other recreational pursuits. Other federal agencies provide for wildlife use in the administration of the public lands. In the case of the Bureau of Land Management, the district manager is instructed to reserve in each grazing district, sufficient federal range forage and habitat to accommodate the needs of a reasonable number of wildlife animals. 6/

The U.S. Forest Service 7/ endeavors to arrive at an equitable balance of use between livestock and big game when there is direct competition for forage. In the wildlife management program of the U.S. Forest Service, reservations of equitable forage and cover for wildlife, particularly on big game winter range, are made; livestock management plans and range improvement programs are coordinated with wildlife management plans; food and cover for upland game birds, waterfowl and small game are reserved; and livestock and big game grazing are coordinated to protect fishery values.

The Bureau of Land Management allocates 1.83 million and the U.S. Forest Service allocates 432 thousand AUM's of public land grazing use to big game (Table III A-14). The amount of use by big game animals allocated by these two agencies is in sharp contrast to the estimated use of 7.3 million AUM's on National Forests in 1964 and the 2.6 million AUM's in 1967 on land administered by the Bureau of Land Management as reported by Dr. Clawson. (1)

Conflicts Between Grazing and Mining Operations on Public Lands

The degree and extent of use of public grazing lands for mineral exploration, extraction, transportation, and processing varies markedly with geographical location, kind of mineral, and type of operation. In general, a grazing area on public land is usually of considerable size. Hard-rock mining, prospecting, and locating claims do not in themselves occupy much space in the total grazing area. This is particularly true when mining products are hauled or shipped to other locations for processing, thus eliminating these operations and stockpiling in the field.

The advent of the pipeline and better highways has changed the picture in the last two decades. While the above areas are generally only a fraction of a single percent of the total grazing land, transportation facilities today require more and more service roads, of greater width and larger load carrying capacity than formerly. Fifty miles of road in a rather small mining district would not be unusual, and if this road is only twenty feet wide on the average, considerable occupied area results. Fifty miles of pipeline in and out of an oil field is a small amount also, but to be considered are the service roads paralleling it and those providing access and exit.

6/ 43 CFR 4111.3-1 (b)
7/ U.S. Forest Service Manual 2205.14

The mining of coal and phosphate ores through stripping and open pit working provides examples of concentration where initially the impact on grazing in the working area is great. Restoration at a later date is now the rule rather than the exception. This is especially true with the large phosphate operations in southeastern Idaho, where excellent restoration policies, including reseeding and replanting, have been formulated and put into operation by the joint efforts of the phosphate industry and the U.S. Forest Service.

The mining of coarse and fine mineral aggregates for construction, mainly highway building, is a major industry today. The emphasis on the interstate system is an important factor in its development. The sand and gravel business in many ways is more important than all of the other mining operations combined.

In the 75 Ranch Study 8/, the ranchers interviewed gave a total of 29 judgments concerning the impact of mining, and its related activities, on grazing. Of these 29, ten said that the limitation was moderate to severe. This activity had the highest percentage of serious impact judgments of any of the 17 land uses listed.

In summary, the four types of mineral recovery activities studied seem in total to have a very small impact on grazing. The land consumed in mining regions is apparently less than 0.1 percent of the total and in small, highly concentrated areas was not found to exceed 2 percent. 9/ Some mining practices do arouse the ire of livestock ranchers. One of these is the practice in some areas of doing assessment work with bulldozers and leaving rather deep holes in open range land. In other areas, however, the rancher and miner appeared to work in considerable harmony with both respecting the other's rights.

Conflicts Between Livestock Grazing and Timber on Public Land

In many ways grazing and timber growing are compatible. In the Forest Service Manual, Section 2205 covers multiple use Coordination. In this section, the generalities are spelled out as to how grazing is to be coordinated with the several multiple uses for the national forests. Section 2205.12 (June 1968, Amendment No. 3) covers Timber Management, and the only rules specified are:

8/ See Chapter III, Section E, page III-102.
9/ See Appendix Chapter VII.

> "1. The following management techniques should be considered where livestock use may damage timber stand regeneration:
>
> a. Providing regeneration protection by fencing which is part of a total management plan.
>
> b. Protecting regeneration areas through temporary modification of the range management plan, such as closing areas in rotation or change in kind of livestock.
>
> 2. Regeneration cutting, other timber management practices, or wildfire may increase forage in timbered areas. In such cases, permitted livestock use generally will not be increased until after adequately stocked reproduction has passed browsing height."

The other resource coordinative items of recreation management, watershed management and wildlife management, as well as the several items listed under "Coordination with Protection and Uses" and "Coordination with Services and Activities" in general are somewhat longer and more detailed. As timber is a resource that is continuously growing, being harvested and then renewing itself again through its several growth stages, the relationship of grazing with any particular timber working circle changes with the timber growth. It would appear then that the most important consideration for understanding conflicts between timber growing and livestock grazing is to understand something of the philosophy of the U.S. Forest Service for managing multiple use.

Since its inception, the U.S. Forest Service has done an excellent job in managing all the resources of the National Forests. It literally put Secretary Wilson's letter to Mr. Pinchot, quoted at the beginning of this section on multiple use, into practice. It did "see to it that the water, wood, and forage of the reserves are conserved and wisely used---; and where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good of the greatest number in the long run." The U.S. Forest Service did this with very little statutory authority. It took a wise philosophy and implemented it with wisdom, in a flexible manner, to achieve what can be regarded in retrospect for the most part as the greatest good for the greatest number over the past long run.

As times have changed, the U.S. Forest Service has changed with them. Insofar as grazing on national forest lands is concerned, the numbers of both cattle (and horses) and sheep (and goats) increased to a peak of around 2,250,000 cattle and horses and 8,500,000 sheep and goats in 1918. (1) The numbers of both have slowly declined since then. Since the latter 1940's, the number of cattle and horses have stabilized around 1,100,000 animals. However, the number of sheep and goats are still declining, although at a much slower rate. Dr. Clawson shows them as being 2,064,000 in 1965. They have been under 2,500,000 since 1960.

Over the years the U.S. Forest Service has learned a great deal about growing and protecting trees. It has also learned much about all of the multiple uses for the forests. Long before Congress passed the Multiple Use and Sustained Yield Act in 1960, the U.S. Forest Service had developed both a philosophy for multiple use and some excellent techniques for managing these uses that were reasonable and adequate for the pressures of those times. When the Taylor Grazing Act was written in 1934, Congress took much from the experience of the U.S. Forest Service. The Multiple Use Act itself was sponsored by the U.S. Forest Service. However, in recent years as the pressures of people, things and organized attitudes have been brought to bear more and more on the country's natural resources, the prevailing philosophies and actions of the agencies managing the resources have been questioned. The concern today is whether or not the management philosophies of these agencies are adequate for these times. In this light, a review of the U.S. Forest Service's structure for managing the forest resources is in order.

Mr. D. Tackle of the U.S. Forest Service presented a paper on multiple use management planning in the U.S. Forest Service which was published in the East African Agricultural and Forestry Journal in June, 1968, which gave a good description of the U.S. Forest Service's methods.(10) In this article Mr. Tackle presented a diagram of multiple use management which is shown in Figure IV E-9 . He describes the objectives of multiple use management as:

> "to further the purposes of the Multiple Use-Sustained Yield Act by:
>
> "1. establishing patterns of land use and resource development that conform with changing conditions and public needs;
>
> "2. managing each area for as many purposes as are feasible and desirable;
>
> "3. integrating management activities so that each contributes to the others for optimum efficiency and public benefit.
>
> "All policies developed by managers responsible for lands administered under the national forest system must be developed in accord with the Multiple Use-Sustained Yield Act and with the above stated objectives."

He goes on to point out that the administrative steps which lead to multiple use management in action is essentially one of

> "continuous inventory, analysis and perception within a framework of multiple-use management direction and coordination. Both the administrative and research units of the forest service play active roles."

Referring to Figure IV E-9, the order of determinations begins with the regional forester in each of the nine U.S. Forest Service

Multiple-Use Management by the U.S. Forest Service

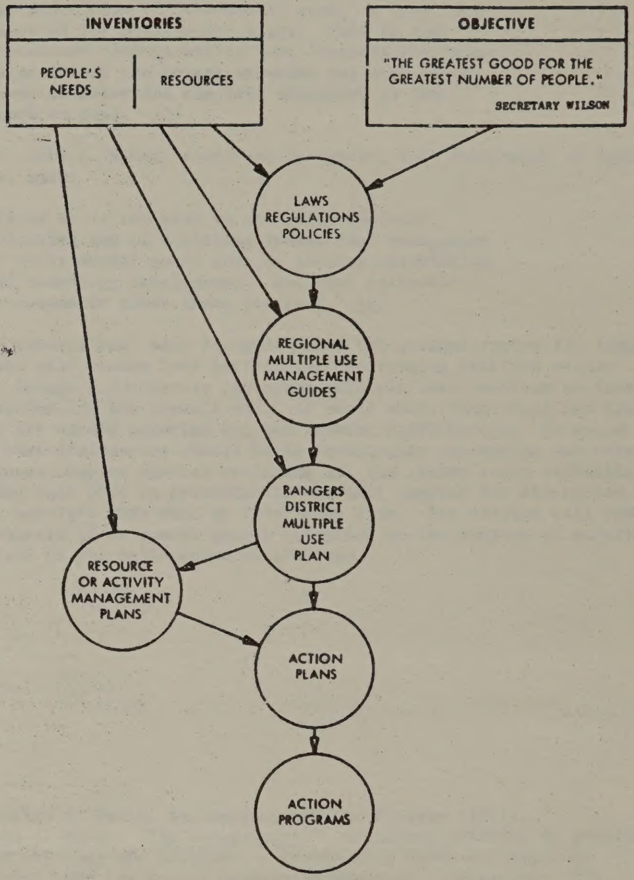
INVENTORIES
PEOPLE'S NEEDS
RESOURCES
OBJECTIVE
"THE GREATEST GOOD FOR THE GREATEST NUMBER OF PEOPLE."
SECRETARY WILSON
LAWS REGULATIONS POLICIES
REGIONAL MULTIPLE USE MANAGEMENT GUIDES
RANGERS DISTRICT MULTIPLE USE PLAN
RESOURCE OR ACTIVITY MANAGEMENT PLANS
ACTION PLANS
ACTION PROGRAMS

Figure IV E-9 (10)

(facing page IV-126)

regions. The regional forester prepares a multiple use management guide for his region. In this he is assisted by his staff of specialists in the several special disciplines. The first step in developing this regional guide

> "is to make an inventory of present and projected needs of people and basic facts about the present situation and potential of the resources. After all the basic facts are gathered, statements are prepared describing the management situation for each of the resources present and the basic assumption under which each resource will be managed. The basic assumptions are arrived at by careful analysis and evaluation of all aspects of the management situation." 10/

After the basic facts concerning the needs of the people and the potential of the resources are obtained and statements are prepared concerning them, the statements are passed on to the district rangers, the "key, on-the-ground resource managers," who develop the "major planning documents which co-ordinate the technical requirements for individual resource and activity development."

As key man, the district ranger's attitudes toward the various elements of multiple use management are most important. This is because the "equal priorities" (3) doctrine espoused by the U.S. Forest Service for multiple use management stresses subjective factors. With only general rules coming from the top, the judgment of the district ranger is the judgment for all insofar as his district is concerned. If he is "range conscious", then he may concentrate on putting as much livestock on the land as possible. The same goes for watershed, wildlife, and recreation. What can easily happen, of course, is that the emphasis will be placed, within the context of the overall rules, on those uses that are currently being pushed by the activists of the time. This within itself can't be criticized if it expresses what the public actually wants and so meets the needs of the public. In the past it has worked well. However, in the past, for the most part the U.S. Forest Service was managing forests for the "water, wood and forage" of the reserves. In the beginning, water, wood and forage were in considerably greater supply than that required to meet the public needs. Wise men witnessed the despoilation of the times and, recognizing that there was an end to the resources, took steps to see that they would be conserved and wisely used for the benefit of all. The question now is whether the same philosophy of management can cope with the increased demands that these wise men foresaw.

10/ Tackle, D. "Multiple-Use Planning, Grazing-Fee Assessment, Forage Allocation and Stocking Control-- U.S. Forest Service Methods," Reprinted from the East African Agricultural and Forestry Journal, special issue, vol. XXXIII, June 1968.

Hall (3) delineates the judgement process of the Forest Service, as practiced by the forest ranger within the responsiblities for choice as outlined above, as follows:

----the forest manager's wide range of choices leads to stressing the subjective factors in multiple use.

----therefore, the vital element in this choice is professional competence.

----but multiple use is not a rule such that two foresters would make the same decisions for land use, based on the same facts and objectives.

----the U.S. Forest Service "equal priorities" doctrine for multiple use is the coordination of separate resource programs rather than a matrix into which separate activities are fitted, i.e., the ranger tries to fit individual resource plans together rather than beginning with an overall multiple use program which truly weighs the needs of the public against the resources available.

----summing, multiple use, as practiced by the U.S. Forest Service, is not a decision making rule, but a commitment to the principle that a variety of different demands will be considered when making professional judgements.

----but land use should reflect true public wishes and desires; and just because the U.S. Forest Service says they have inventoried the present and projected needs of the people doesn't make it so.

Hall's analysis of the "equal priorities" doctrine as practiced by the U.S. Forest Service is being expressed in somewhat similar words by more and more students of the public land resources. Representative Wayne N. Aspinall pleads for "the opportunity to know what we are doing," 11/ and states that "the really big problems that we have facing us ... are: (1) how to develop the principles to guide and (2) the delineation of procedures to be followed in accomplishing our objectives." 12/

11/ Rep. Wayne N. Aspinall in remarks at a meeting of the Natural Resources Committee of the Chamber of Commerce of the United States in Denver, Colorado, Sept. 27, 1962.

12/ Rep. Wayne N. Aspinall in a paper presented at the Conservation Banquet, Utah State University, Logan, Utah, May 3, 1963.

Charles A. Reich of the Yale Law School goes further and questions whether present legal and administrative procedure provide safeguards to insure that public wishes will determine operating decisions. He states that the U.S. Forest Service:

> "(R)ecognizes, in the matter-of-fact pages of its manual, that its ultimate job is nothing less than the definition of 'the public good,' a task once reserved for philosopher-kings. This is the tremendous responsibility that Congress has delegated to all the forest agencies and with it the power to determine the very character of the American land." 13/

Mr. John A. Baker, Assistant Secretary, U.S. Department of Agriculture, said:

> "(A)nd it is not easy to determine the most effective way of utilizing forest land management to serve social goals such as poverty alleviation and community development. The best rationale is needed to guide these programs." 14/

It appears that many recognize that the present system for judgment decisions will become less perfect for determining relative values between forage and timber as the other multiple uses continue to increase in importance in the overall mix. It would seem, then, that the time is past for merely pointing out the growing difficulties. It would appear that discussions should begin immediately concerning new ways to solve these complex choices utilizing all the latest tools available to man. One such plan is presented in the next chapter for discussion by greater scholars than make up this Study Team. Its mission will have been achieved if it sparks enough attention to the subject of solutions as apposed to the delineation of problems.

13/ Charles A. Reich, Bureaucracy and the Forests (1962).

14/ John A. Baker. "In Perspective." Statement relating to problems and why they are problems -- Considering views expressed at Public Land Law Review Commission Hearings. Washington, D.C. April 6, 1968.

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SECTION F

EMERGING OBJECTIVES

In the previous parts of this section the analysis has been confined to the stated policy objectives of the Congress and the public land agencies with respect to forage. In this section an analysis will be made of the emerging objectives; those goals which appear to be becoming more important for the future. These emerging objectives seem to be:

1. Flexibility in programs to permit the agencies to meet the changing needs and wants of future generations.
2. A change in attitude on the part of the land agencies with respect to the public land, by moving away from that of custodian toward a position more like that of a landlord.
3. An increasing concern regarding how public land policies may aid in the alleviation of rural poverty.
4. A growing realization that perhaps public land policy should be more closely integrated with general agricultural policies concerning agricultural surplus and production control.

Flexibility

When the forest and timber reserves were withdrawn from the public domain and later turned over to the Forest Service for administration, the public interest was confined largely to the preservation and conservation of rapidly diminishing resources. At the time the Taylor Grazing Act was passed, the concern of Congress was largely to prevent deterioration of the range lands. The Taylor Act did not require the permanent withdrawal of land from private use. It merely recognized that its use for crops was limited and that care of it was required to prevent its deterioration until it could finally be disposed of for higher uses. This was a policy of retention for disposal.

Since the passage of these acts, multiple uses have become more important. The public generally is looking upon resources for utilities other than economic and commercial use. A growing awareness of the needs for watershed protection, wildlife preservation, fishing, hunting, scenic beauty, and other recreation has caused a greater public interest in these lands. Powerful groups representing interests other than commercial uses are advocating policies which tend to promote the collective non-market values at the expense of economic values. With the rise of atomic weapons and missiles, lands removed from congested areas have importance for national defense and security. Furthermore, as population increases and the urban areas become more concentrated and congested, the relative importance of the various wants will change. These changes introduce an element of uncertainty as to what will be the future wants and needs of society with respect to the public lands.

Were it not for the uncertainty over the nature of future requirements for these resources, disposal of the public lands would provide a reasonable alternative to retention. The public land could be classified as to its best uses for now and for all time to come. The lands could then be disposed of for their best commercial use. Those lands having no commercial use would be retained for public collective uses. Once uncertainty is introduced, however, no reliance can be placed on the current determination of what future wants will be. Land disposed of through present priority classifications cannot be used for another purpose in the future without incurring a greater cost in repossessing the land. After land has been disposed, ability of society to reconsider and re-evaluate uses is greatly restricted and flexibility is sacrificed. Regard for flexibility, therefore, would tend to justify the retention of land in government hands.

Consideration of flexibility also conflicts with security of tenure. The more secure a permittee is in the use of public grazing lands, other things being equal, the less flexibility the government possesses for diverting these lands to other uses. To retain the advantages of both flexibility and security, compromises must be made. For instance, the federal agencies might be prepared to make financial sacrifices to secure flexibility, such as paying compensation to the users for the loss of the use of the land or privileges and liberalizing payment for investments made by the users. Another alternative might be to vary the length of time in which changes in uses could be made. For example, long term agreements could be entered into with the users in matters such as agreements relating to management programs. During the period of the agreement, the use of the land would not be changed without compensation to the permittee. Once the period of the agreement had expired, the land agency would be free to re-evaluate the land for priorities in use.

A similar conflict would tend to arise between flexibility and stability of both the range livestock industry and of the local community. If stability of the livestock firm is the main objective, flexibility will be sacrificed. In section D of this chapter a question was raised as to the relevance of the stability criteria, such as commensurability and security in tenure, to the stability of the livestock industry. With the expectation of a long secular increase in demand for beef, veal, and lamb, and with better provision for credit and financing of livestock enterprises than existed a generation or two ago, it is doubtful that stability of the family farm and the other criteria are any longer needed to provide for

the stability of the livestock industry. The small farm is economically inefficient. Strict adherence to commensurability requirements can also induce inefficiency. Even transferability of permits among users through competitive bidding or through appraisal would probably have little effect on the stability of the industry. There appears to be little difficulty arising from the stability of livestock operations when private land, such as railroad land, is rented or in the Bureau of Indian Affairs or the Department of Defense where much of the land is allocated on the basis of competitive bids. Security of tenure is probably necessary to induce best care of the range lands, but the criteria for stability of the family farm and of the farm community have questionable relevance for the present day.

Flexibility may be attained through long term leasing and/or tenure arrangements by which permittees may enter into agreements with the public land agencies concerning the use and management of the range. At the same time the federal land agencies may vary the maturity dates of the agreements in such a manner that a certain percentage of the agreements will terminate each year. This would allow the agencies to evaluate continuously each portion of the range land as the agreements terminate. Thus, over a period of years, all the land can be reassigned to its current or to different uses to maintain flexibility. This alternative will be discussed further in the section on Alternatives.

Increase in Proprietary Interest in Public Grazing Lands

In addition to the growing interest of the public in the federally owned lands as a national heritage, a trend is developing on the part both of Congress and of the land agencies themselves toward a position of proprietorship rather than custodianship. It was pointed out in sections C and D of this chapter that the attitude of the agencies, especially the Forest Service, has been changing over the years. Whereas during the early years of its activities the Forest Service was primarily concerned with care of the land, with fairness to users, and with stability, in more recent years it has shown more concern over justification of its allocation policies and its pricing practices to non-users and to the public at large.

Coincident with the change of attitude on the part of the public and of the agencies, the Congress has indicated a concern over the tendency to use public commodities and services as a means of benefiting the few at the expense of the public generally. This has manifested itself in the Independent Offices Appropriation Act of 1952, in which the Congress directed all agencies to place all charges and fees on the same basis. The statement of policy, cited above, also directed the agencies to fix charges and fees at a rate high enough to cover the costs of service.

In setting forth these policies, the Congress was prompted by several considerations. First, there was recognition that many of the fees and charges were set at rates which in fact subsidized certain activities, such as agriculture and public power. These actions were originally taken during the period of the depression when there was a need by various economic groups for assistance. With the return of prosperity during the post war era, such subsidies were no longer needed. The Congress felt that if such economic groups were ever to become self sufficient, then was the time to start. Second, during the latter forties and early fifties, there was a strong movement to get the government out of business. One way to start would be to stop subsidizing federal commercial activities. Finally, there was the desire to place more of the federal activities on a market basis. The policy statement of August 31, 1951 made it clear that the Congress recognized non-economic objectives of federal agencies, but it also required that these non-economic objectives be justified.

Should the public land agencies move to a position of landlord, this would involve changed relationships between the agencies and the user and between the agencies and the land resource.

With respect to the user, the position would change from one of a benevolent custodian conferring a privilege upon him to that of an owner asking for more of the full market value of the resource. This new position in turn would require a broader and more specific agreement between the agencies and the user. The government undoubtedly would find the user less receptive to management suggestions that cost him time or money unless there were some compensating features. Nor would the user view with favor any suggestion of cooperative improvements for which he would not be assured of receiving the full income return during his occupancy. As the termination date of the agreement between the agencies and the user approaches, the user would become particularly recalcitrant about assisting in maintenance and development practices.

The changed relationship between the agencies and the land resource would be a result of the changed relationship between the agencies and the user. With the user being more reluctant to maintain or improve the land, the agencies will have to assume more of the burden, and especially for long term improvements. If, as landlord, the agencies wish to optimize their returns from the land, they would have to make improvements to the point where marginal costs equal marginal returns. This would require them to go to Congress for appropriations to accomplish the necessary improvement. Congress would probably be somewhat reluctant to give the agencies all the money necessary for this. It may also be true that Congress would be reluctant to give the agencies even enough money to make up for the lack of interest in maintenance that the user would have as described above.

Under these changed conditions, the agencies might encounter greater difficulties also in renegotiating an agreement after the expiration of the previous one. They might have to re-evaluate not only the use to which the land is to be put but also the rental value to be derived from the land. They might also have to select new users.

Under situations when only a few users can profitably use the resource or when all users are operating with a cooperative grazing agreement, the number of potential users may be greatly limited. When a monetary favor is being bestowed upon the user, the agencies would find a large number vying for the privileges. When the full market value is charged, the agencies may discover that the market situation has changed from a sellers' to a buyers' market. It is quite likely that the buyers for the most part would be either the large operator who is expanding to secure the economies of scale, or the outsider who is interested in securing the capital gains which may accrue to his private land holdings.

The new fee structure represents a significant movement of the government towards a proprietorship position. For purposes of analysis, the basis for determining the fees to be charged in the future is the difference in the cost of using private range lands on which lease costs were included and public lands on which no fees were included. The difference between the two costs is considered the user cost differential. This differential is assumed to be the value to the user of the public land for the privilege of using these lands.

The use of a cost differential in determining the value of the public land to the permittees has certain advantages over a mere difference in rental values. Cost differentials will take into account all the factors which make grazing on public land more or less costly than grazing on private lands of approximately equal quality. Cost factors also tend to be more stable than other pricing items in ranch and farm enterprises.

The value of forage land would tend to change more rapidly as the price of meat varies than would the costs of producing the meat. This is probably one of the reasons why the formulae for setting fees used in the past by the U.S. Forest Service and by the Bureau of Land Management, which were based upon the price of beef and lamb, did not reflect the full value of the range lands. During periods of rising meat prices, profits will rise more rapidly than the prices. The reverse is true during declining prices. Probably the best measure of the value of grazing to the ranchers is the price of stocker, feeder and breeding stock, since these are the principal production agents in producing beef. Prices of stocker, feeder, and breeding stock are more variable than the prices of slaughter beef. During the sharp decline of cattle prices in 1951-53, the cost of feeder steers dropped nearly 50 percent, whereas slaughter stock dropped only about one third. Similarly, during the rise in prices following the upturn in the cattle cycle in 1958, slaughter prices rose 14 to 20 percent, whereas the prices of feeder steers rose 50 percent. During both periods costs other than livestock and forage remained comparatively stable. (8)

Large variations in prices and income of cattle ranchers would in all probability reflect themselves in the lease or rental prices of private lands. It would make a difference if private rentals were surveyed during the rising or the declining phases of the livestock cycle. When cattle prices are rising, ranchers tend to expand their herds by purchasing breeding and stocker animals, by feeding steers to heavier weights, and by holding heifers for breeding purposes. "The retention of some breeding stock reduces market receipts and this reduction in slaughter raises price further. This continues until the build-up on farms and ranches begins to approach the limits of carrying capacity, and market receipts from the larger herd become large enough to halt the rise in price or turn it downward." 1/ During the downward phase of the cycle, the opposite conditions prevail. During the periods of the build-up in cattle numbers, the lease or rental price of private lands would tend to rise. The opposite is true during the downward phase of the cycle. Rental or lease prices would depend somewhat on the phase of the cycle in which the analysis is taken.

In recent years, however, the pronounced cycles in the size of the herds and in feeder cattle produced seem to become somewhat blurred. In place of large liquidations in herds during the downward phases of the cycle, there seems to be a continuous build-up in herd sizes. Thus a constant pressure on the capacity of grazing lands is being experienced.

An unpublished study of the number of beef cows in nine of the Eleven Western States (California and Colorado were omitted) compiled by Dr. A.A. Araji of the University of Idaho, showed that the build-up in number of cows in herds increased continuously from 1951 to 1955 and 1956 but then dropped off in 1957 and 1958. Following the low in 1958, the number increased rapidly through 1967, the last year for which data are available. Even in the low of 1958, the numbers were larger than in any year before 1953. The fact that there was no tapering off of cow numbers after the severe drop in price in 1962-64 indicates the degree of stability of the cattle industry. Wholesale liquidations are not found following price reverses as occurred previously. The one factor that seems certain is that herds are increasing rapidly. In 1967 the number of beef cows on

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1/ Geffrey S. Shepherd and Gene A. Futrell, Marketing Farm Products, Iowa State University Press, 5th edition, p. 124.

farms in the nine Western States was 61 percent greater than in 1950. (1)

These data are important for the analysis here because they show that the demand for private and public grazing land is on the increase. While the demand for forage has expanded during the period since 1950, the numbers permitted on the public range have not. To the contrary, they have decreased somewhat. As a consequence, greater pressure on private range lands has been experienced. This presumably would increase both the rentals on private lands and the value of the privileges on public lands. The user cost differential measures the difference in cost of the public and private range lands. However, a significant proportion of this differential is the cost squeeze affecting ranchers as they attempt to enlarge their herds.

Another factor affecting the lease or rental value of private grazing lands is the need of the rancher for these lands at a specific time. The interviews conducted with the 75 ranchers which are described in Chapter III, Section E, showed that private lands with high rental rates were used only intermittently. For the most part, private grazing lands were leased by permittees at high rates during fill-in periods to permit flexibility in the on-and-off dates of public lands, and to supplement public grazing lands during seasons of low forage production.

Permit cost in the sense of the capitalized value of the permits represents a number of actual and expected values. During a period of rising land values, ranchers anticipate a continuing increase in capital values. These values reflect, therefore, a speculative anticipation of such capital gains. Because the U.S. Forest Service and the Bureau of Land Management have asserted and have frequently exercised the right to decrease the number of privileges issued to a rancher, the value reflects this uncertainty. In addition, ranchers must meet the commensurability requirements and the limitation in numbers of privileges issued to any one rancher on U.S. Forest Service lands. These factors would tend to decrease the value of the permit over the value of comparable private land. On the other hand, economies of scale exist in ranching firms. Therefore, the permit value should increase because of the competition of ranchers striving to secure more efficient-sized operations.

This problem concerned Gardner in his study of permit values during the 1950's. Gardner found the permit value of 15 transfers in northwestern Colorado on Bureau of Land Management land to be

$10.92 per AUM, and on U.S. Forest Service land $16.45 per AUM. These were deflated values because the expected values based upon the capitalized values of cost differentials would have been $44.33 per AUM for Bureau of Land Management permits and $23.19 for U.S. Forest Service permits. Gardner explains the differences between actual and expected values on the basis of the uncertainty surrounding the allocation criteria of the land agencies. (4)

The Interdepartmental Grazing Fee Study showed a considerably less user cost differential in the U.S. Forest Service lands than did Gardner. After deducting the appropriate fees, the Gardner study showed a net user value of $2.66 (5) whereas the U.S. Forest Service study showed a net user value of $1.06. (6) On the other hand, the U.S. Forest Service showed a cost of permit value of $25.35 for cattle and $19.45 for sheep. In connection with these permit values the U.S. Forest Service stated:

> "The capitalized difference between the total non-fee cost of operating on comparable private land equals the permit value at 4.3 percent on cattle permits and 4.7 percent on sheep permits. Use of permit value at any summarization below the survey wide level, however, proved to be unreliable because of lack of adequate observations. These observations consist of actual transfers during a five year period, 1961 through 1965." 2/

The significant differences between the cost of permits observed by Gardner during the 1950's and the U.S. Forest Service survey in the early 1960's are difficult to appraise. The fact that Gardner suggested a capitalization rate of 6 percent, whereas the actual rate was less than 5 percent, accounts for only a minor part of the variation. A considerable portion of the difference must be explained by a change in anticipations of capital gains in permit values during the eight year period between the two studies. These variations in permit value emphasize the difficulty in attributing too much of land values and prices to the earning capability of the land resource. It is difficult to determine exactly what land value the permit values actually represent.

Another consideration of importance in the new fee structure is its effect on allocation of the range resources. It was pointed out in Section D of this Chapter that under practices in effect before January, 1969, the tendency would be for the market to reallocate the range land after the original users waived their privileges, unless such criteria as commensurability and limitations of numbers exercised

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2/ U.S. Department of Agriculture, Forest Service, "The Present Forest Service User Fee Study for Livestock." Prepared for presentation to the Secretary of Agriculture's Advisory Committee on multiple use of national forests. December 1967. The value used was $1.57, full value of use, less average fee $.51

a constraint upon the market operations. It was also pointed out that the rancher who already possessed land and was seeking an efficient sized unit would be able to bid higher for the public land privileges than ranchers who had no land. The change in fee structure now in effect should not change that tendency in range land allocation. If a full market value is paid for the privileges at the time of transfer, it makes no difference to the purchaser whether he pays the full market value to the Federal Government or to the rancher. The rancher who had acquired the privileges through their purchase from other ranchers will lose that portion of the capital value represented by the user cost differential at the time of his purchase. This is because he cannot recoup his loss by passing it on to the next purchaser. The trend towards more efficient allocation of range resources will not be affected by the change in methods of charging fees.

Another question which arises is whether or not the new fee structure will capture the full market value of the grazing privileges when they are transferred. The U.S. Forest Service has suggested that the fees could be adjusted in the future to the index of grazing land values, using the USDA Economic Research Service series Farm Real Estate Market Developments, which gives the "index of average value of farm real estate per acre for grazing land in the Eleven Western States." It was pointed out above that land values reflect factors other than the economic value of the resources to the user. We have witnessed during the past two decades the paradox of rapidly rising land value and declining returns to agricultural operators. From the evidence presented in the previous paragraphs it would seem that the value of privileges are equally subject to erratic movements. (2)

Another proposal was to relate the fee to an index such as private lease rates. Since the private lease rate explains most of the difference between the public and private land use differentials, the trend in the lease rate should reflect these movements quite accurately. In such a situation, however, there would be no assurance that a market value would not accrue again. Individuals concerned with speculative investments, or ranchers striving to secure the advantages of economies of scale, may still be willing to pay more than the capitalized fee rates for the privileges. Possibly the only certain way in which the rise of a capital value can be prevented would be to have the federal agencies reclaim the land at the time of each transfer, require either open bidding or an appraisal, and transfer it to users of its own choice for a specified period of time.

The Cost of Service as a Criterion for Fee Charges

In the policy statement of Congress in 1951 cited on the previous page, 3/ all agencies were urged to fix charges and fees at a rate high enough to cover the cost of service, "taking into consideration direct and indirect costs to the government, value to the recipient, public policy or interest served, or other pertinent facts." Through the application of this principle the tax payer would be relieved of the cost of providing services from which only a few individuals derived benefits. Such a policy could be an alternative to the charging of the full user cost differential.

That the receipts of the public land agencies from the sale of services are substantial is revealed by Tables IV D-12 and IV D-13 facing page IV-88. In 1965, the U.S. Forest Service had receipts of $142,200,000 and the Bureau of Land Management $234,361,000. Receipts from grazing, however, have shown a consistently downward trend in the percentage they contribute to total receipts. In the U.S. Forest Service, until about 1922, grazing fees comprised almost 50 percent of the total receipts. After that date they declined continuously. In 1965, they contributed only 2.1 percent of the total receipts of that agency. The total amount of the receipts rose and fell with the prices of beef and lamb. They reflect the low income years of the depression when they yielded only $830,000 in 1932, and also, the World War II and the post World War II boom in cattle and sheep prices. They reached a peak in 1952 of $5,023,000.

In 1941, receipts to the Bureau of Land Management from grazing on the public domain reached its highest percentage of total receipts of 12.9 percent. From that point, grazing receipts as a percentage of receipts on the public domain declined to 1.8 percent in 1965. During that year the receipts from grazing reached $4,251,000. The decline in the relative importance of grazing reflects the great increase in value of timber, minerals and oil.

No reliable data exist for comparing receipts from fees with total costs of services rendered. An analysis was prepared in 1963 by the Bureau of Land Management for the Sub-Committee on Public Lands of the Committee on Interior and Insular Affairs of the United States Senate. This analysis applied to the Bureau lands only. The figures are for the ten-year period 1954 to 1963 and are shown on Table IV F-17. The data show that after 1955 a continuous decline occurred in the percentage of costs of service recovered by grazing fees. In 1955, 52.9 percent of the costs of services were recovered, whereas in 1963 only 22.4 percent were recovered. However, the grazing fee receipts did equal 154 percent of the cost of administration of grazing lands in 1955 and 85 percent in 1963. They also equaled 127 percent of the cost of administration of grazing lands

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3/ 5 U.S.C. § 140 (1964).

TABLE IV F-17

BUREAU OF LAND MANAGEMENT

Obligations Incurred For Certain Activities in Management of Lands and Resources
Fiscal Years 1954 - 1963 Inclusive

Activity	1954	1955	1956	1957	1958	1959	1960	1961	1962	Est. 1963
Administration of grazing lands	1,429,656	1,450,118	1,633,556	1,820,365	2,226,269	2,340,259	2,292,864	2,835,861	3,353,475	4,535,300
Fire pre-suppression	122,000	122,976	151,131	155,610	219,638	256,526	251,309	261,481	653,884	1,093,900
Soil and moisture conservation	1,710,995	1,700,779	2,738,971	3,186,142	3,625,060	3,815,050	3,721,477	5,116,877	6,345,418	10,131,500
Weed control	1,093,389	646,640	698,782	666,278	554,058	1,068,660	833,435	797,383	894,196	907,100
Proportionate share for general administration ..	392,572	315,446	348,085	367,841	404,953	411,836	426,031	454,538	515,846	618,284
Total	4,748,612	4,235,959	5,570,525	6,196,236	7,029,978	7,892,331	7,525,116	9,466,140	11,762,819	17,286,084
GRAZING FEE RECEIPTS ...	2,057,149	2,240,295	2,443,747	2,285,645	2,763,320	3,228,332	3,487,992	2,982,188	2,780,252	3,870,000
Less Amounts										
Appropriated for payments to States	350,461	347,838	365,923	358,333	401,293	432,855	544,001	479,959	438,447	618,000
Appropriated for Range Improvements	387,976	525,587	618,873	564,846	686,713	768,653	863,070	739,842	696,525	967,200
Net	1,318,712	1,366,870	1,458,951	1,362,466	1,675,314	2,026,824	2,080,921	1,762,387	1,645,280	2,284,800

plus their proportionate share for general administration in 1955, and 75 percent in 1966. The most important reason for the decline in the percentage of costs of services recovered by grazing fees was the large increase in expenditures on soil and moisture conservation programs. This item increased from $1,700,000 in 1955 to $10,132,000 in 1963. Other costs also rose precipitously. Administrative costs, which amounted to $1,450,000 in 1955, rose to $4,535,000 in 1963, although the percentage administrative costs bore to total costs declined from 34.2 percent of total costs to 26.3 percent during those years. If the figures presented by the Bureau of Land Management are typical, grazing fees would have to be increased substantially if total costs are to be recovered.

The policy of requiring agencies which provide services and commodities for sale to become self-supporting works out very well where the cost of services are readily allocated to the commodities and services performed. Under such circumstances the difficult tasks of allocating administrative and joint production costs are relatively simple. Electric energy generated on government property, for example, can be priced and the cost of its administration can be allocated to the production and sale of this commodity.

The basic difference in public lands is their emphasis on multiple use. This invariably raises the question as to how much of the cost of administrating public grazing lands should be allocated to grazing, how much to timber, how much to recreation, how much to wildlife, and how much to watershed protection, etc. To a degree, the example of electricity is appropriate for comparison. On the other hand, electricity is produced by private utilities as well as by publicly owned ones. Electricity also competes with other energy resources. Administration costs, therefore, are generally carefully watched by the federal agency involved in order to make their comparisons with private utility costs favorable, and the service must be priced to compete with other energy resources. It is more difficult to allocate costs in a multiple-use land situation. For one thing, most of the allocative uses have no market price at all. There would be a tendency, therefore, for public land agencies to load all the costs of administration of the multiple uses on grazing, timber, and other revenue producing resources, and not on the uses which provide no revenue.

On the other hand, ranchers would tend to protect the costs which they would have to pay for the administration of uses for which they derive no benefits. The land agencies have already found it difficult to get ranchers to participate in improvements which benefit wildlife and watershed protection more than grazing. As long as multiple use is an important objective of public land policy, cost of service becomes a weak objective on which to justify any fee base.

Comparison of fees collected with expenditures, described on the previous page, does not provide a good basis for determining the extent to which the fees collected cover costs. In fact, no reliable figures, of that type are available. Marion Clawson attempted, but with little success, to estimate a financial statement for the public lands as a whole for the year 1963 as an indication of the type of information needed by the Bureau of the Budget to evaluate the efficiency of operation of these agencies. He concluded this phase of his analysis with the following statement:

> "The present programs of most agencies seem to comtemplate continued relatively large cash deficits. Without accurate data of the type shown in Table 12A, one cannot be sure whether in fact such cash deficits are true deficits when all items have been properly taken into acccount. One line of analysis would be to show what level of charges, or of value estimates, would be necessary for some of the nearly free items--particularly recreation--in order to balance a true account. If a full accounting of income and expenditure items revealed a deficit on some proposed line of land management, questions might well be raised as to the wisdom of the latter. If all reasonable values and costs have been included, what social or national gain is there from a method of land management which leaves a deficit? Admittedly, estimation of the value of some intangibles would be difficult, but not impossible. If they were to be estimated and included, there would be little public gain from a management program which cost more than it yielded. This type of thinking has been foreign to most federal land managers in the past, but changing national programs and needs may put far more emphasis upon it in the future. It need not be inimical to "conservation" management; on the contrary, full accounting and balancing might well lead to more intensive and better financed land management than would otherwise be possible."

From the information made available by the land agencies, it is impossible to determine whether the fees are sufficiently high to cover federal investment costs plus administration costs properly allocable to grazing. Probably fees would have to be (see page IV-142) raised significantly if all costs were to be covered. On the other hand, long term investments cannot logically be included with current costs. The question immediately rises the extent to which ranchers should bear the costs of such activities as recreation, hunting, vacationing, camping, and the wide variety of other uses of the public domain which do not contribute to the upkeep of the wildlife and other facilities supplied by the agencies and the ranchers. These factors, which could be classified as collective wants, will probably continue to be supplied free by the government simply because no easy way of charging and collecting is discernible. The critical issue, therefore, from the standpoint of fairness to all concerned, is the extent to which products of the public domain should bear their full costs, whereas the items of collective goods are supplied to the users relatively free of charge.

To the present time there is little information on the complementary and competitive relationships among uses on the public land. No data exist which will indicate at what point multiple uses cease to be complementary and start to become competitive, or at what point the marginal application of one use decreases another use more than its marginal value product would justify.

In the past the agencies did not need this information. As long as they knew they were conveying a privilege of value on the user, they could count on considerable tolerance on the part of the user in the multiple uses because he could not afford to give up his privileges. This situation may change as the government moves to either a proprietorship or a (cost-of-service) position. The cost of service and the user cost differential are computed with a given mix of multiple uses occurring on the public lands. Will the full user cost differential change as these uses change? If so, to what extent will they change?

These questions will have to be answered by the agencies when the full market value of the range is attained. The rancher may insist that any increase in multiple use is adversely affecting his ranching operations and that these multiple uses were not taken into account when the user cost survey was made. As a consequence, the agencies may be compelled either to provide some information on competitive uses or else to set priorities on land uses and be prepared to restrict the competitive uses. An important question is raised at this point. Is multiple use consistent with the full market value of fees charged on public lands?

Rural Poverty, Rural Community Welfare and Public Land Management

Much in the policies of allocation and stability relate to welfare. The family farm, protection against monopoly, commensurability, stability of the rural community, all are concepts which represent the desire to provide for the growth and welfare of the small ranch and of the local community. This procedure was relevant to the welfare situations of the 19th and early 20th centuries. It was through the preservation of the small family farm that the growth and development of the West occurred.

While this policy may have been appropriate at one time, it is questionable that it is appropriate today. Family-sized farms and ranches are still economic units, but a good efficient family-sized ranch or farm is much larger today than a generation ago. Thus, attempts to preserve ranches of much less than 200 animal units are forcing ranchers into operations too small to make an adequate living for them. The allocative policy in the past has tended to encourage uneconomically small units. Through the transfer policy these units have been fragmented even more. To prevent the spread of poverty within the range livestock industry, therefore, a policy of encouraging efficient-sized range livestock units should be adopted.

The federal land agencies probably should cease encouraging the very small unit. Even more important, they should take positive steps to encourage the establishment of larger units. If, at the time of transfer of privileges, the agencies would reallocate the privileges in such a manner as to develop larger units, a more healthy range livestock economy would develop.

Another procedure would be to encourage the establishment of cooperative livestock associations. These associations could combine a number of smaller units into efficient operations and free the small rancher to devote his time to other farm enterprises or to take employment off the farm.

The problem of poverty among non-white cattle and sheep ranchers is especially acute. This is true particularly of the Indians and the Spanish Americans. At the present time the Indians in New Mexico are given free use of the land in proportion to the number in the families. This function will probably have to continue. But the poverty problem cannot be solved by allocation of grazing privileges alone. Attempts should be made to enlist the services of other welfare agencies to assist in working on the poverty problem of these groups.

It should be pointed out that the free market can assist in bringing about an adjustment in the case of the very small range livestock enterprises. By permitting the free purchase and sale of grazing privileges as in the past, the small rancher could secure a capital value for his base property and for his grazing privileges. This enables him to sell his holdings for a substantial price and to use the proceeds in reestablishing himself in an off-ranch business or to assist him to sustain himself in employment in which the wages are very small. In this respect the attempt to secure the full market value of the grazing privileges through an increase in the fees would tend to impede adjustments on the part of the small ranch operator.

Attempts to stabilize the farm community are of even more questionable value as far as federal land policies are concerned. As farms and ranches become larger, the number of farms will decrease. In turn, the small rural communities will tend to become smaller or to disappear completely. At the same time, the functional community

will become larger. Many of the farm communities will no longer be large enough to provide the essential community services, such as hospitals and medical care, schools, churches, police protection, and shopping and other service facilities. This will present a difficult problem in the future. As communities become fewer and farther apart, many rural areas will be left without adequate community facilities. The cure, however, will not be found in land policies which will maintain and spread poverty among the ranchers. Instead, solutions will have to be found outside the federal land policies.

Rural poverty has become a critical national issue. It will become an increasing one in years to come. The problems of rural poverty are not within the power of land policies to handle. The federal land agencies can best serve the cause of rural poverty by pursuing policies which will assure a healthy and prosperous livestock industry. Such an industry can thrive only on efficient-sized ranch units. The poverty problem both on the ranch and in the rural community will have to be handled by other agencies.

Production Management and the Public Lands

The most critical problem facing agriculture today is that of over-capacity in crop production. The National Advisory Commission on Food and Fiber in its report in July 1967, stated the problem in the following manner: "U.S. farmers have the capacity to produce more than their commercial markets will absorb at prevailing prices. This 'excess capacity' is primarily the result of technology and capital flowing into agriculture faster than the manpower and land they replace have been flowing out. ... This excess manpower and excess crop acres are the heart of the U.S. agricultural adjustment problem." 4/

The public land agencies have become involved in the problem of surplus lands and hence surplus crops in several respects:

1. The Bureau of Land Management possesses land which is still subject to disposal under the various land laws. Much of this land can go directly and indirectly into the production of crops which are in surplus supply.

2. During the depression years, land was withdrawn from crop production under the Agricultural Adjustment Administration Act and later by the Resettlement Administration and the Farm Security Administration Acts. Much of this land is now being administered by the U.S. Forest Service as National grasslands, and by the Bureau of Land Management. The acreages of this Land Utilization Projects land is shown in Table III A-29, page III-46. These lands, in many cases are capable

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4/ The National Advisory Committee on Food and Fiber, Food and Fiber for the Future, Washington, D.C. July 1967. p. 11.

of growing crops. They have, in fact, the same capabilities as some of the land now in cultivation. If they were allowed to be put in private ownership again, they would probably be planted to wheat and feed grains which are crops now in excess supply.

3. Land can be withdrawn by the Bureau of Reclamation to be irrigated and later homesteaded and put into crop production.

4. In addition, some 30 million acres of land were retired under the Conservation Reserve of the Soil Bank in the Agricultural Act of 1956. This land may either be retained, added to, or released for agricultural use within the next few years.

Both the National Advisory Commission on Food and Fiber and the President's National Advisory Commission on Rural Poverty took cognizance of portions of these lands in their policy recommendations. The Food and Fiber Commission stated: "Reclamation and land development projects paid for by public investment have significantly increased farm production in the past three decades during which agriculture was plagued with overproduction and surpluses. Clearly, it is unsound policy to invest public funds in new farm capacity at a time when the overriding problem is too much capacity.

"The Commission recommends that public lands for agricultural reclamation, irrigation, drainage and development projects should be justified on the basis of whether they represent the cheapest means of getting additional farm production--if needed." 5/

This Commission made further recommendations relating to land retirement for the purpose of production control. It pointed out that some land now in crops is low yielding and subject to wind and water erosion. Whole farms and, in some cases, whole areas should be taken from crops and put into grass or forests. The Commission further recommended:

"To provide the incentive for land use shifts and to indemnify the affected persons, communities, and regions for their losses, the Commission recommends a program patterned after the present Great Plains Conservation Program and the Cropland Adjustment Program. The program should be expanded over all marginal cropland of the country." 6/

5/ National Advisory Commission on Food and Fiber, Report of July, 1967, p. 21.
6/ Ibid. p. 28.

In a similar manner, the President's National Advisory Commission on Rural Poverty pointed out that reclamation and soil developing programs have been competitive with the crops produced by low income rural families. "Federal reclamation projects in the Western States, up to about 1955 have been responsible for displacing 5 percent of the farm workers in the Southeast, the area with the largest concentration of rural poverty. Cotton and vegetables produced on newly developed lands in the West compete directly with production of these crops in the Southeast." 7/ The Rural Poverty Commission recommended: "That land developing programs of the Bureau of Reclamation, the Soil Conservation Service, and other federal agencies be discontinued and that no more public money be invested in developing privately-owned farmland until the nation needs more land for producing the desired output of food and fiber products. Exceptions should be made where the development offers the only feasible escape from poverty for Indians and other specific groups of rural poor people." 8/

The Farm Bureau Federation has recommended land retirement as a means of production control. This organization has recently reiterated its position, and it is advocating a program similar to that proposed by the Food and Fiber Commission. The Farm Bureau suggests that the government phase out the cotton, wheat, and feed grain programs over a period of five years. A gradual decrease in crop payments over a period of years would be accompanied by a Cropland Adjustment Program. At least 10 million acres per year would be retired between 1971 and 1975. This program would be operated on a bid basis and an emphasis would be placed on the retirement of whole farms.

Along with the land retirement program, the Farm Bureau proposes a special aid program to low income farmers. Those farmers with less than $5,000 in annual gross sales and with off-farm incomes of less than $2,000 would be eligible to receive retraining grants for a period of two years in addition to the land retirement payments under the Cropland Adjustment Program. They would also be eligible for other payments under the agricultural programs. (3)

With the growing emphasis upon land retirement and upon the curtailment of land development programs it would be logical that public land policy reflect these trends. Should a land retirement program materialize, the present public land agencies would probably be expected to administer these lands just as they are now administering the Land Utilization project areas. In a similar manner, it will probably be the policy of the land agencies not to permit withdrawal from the public domain of lands which would be expected to be used as cropland and would add directly or indirectly to agricultural surpluses or contribute further to rural poverty.

7/ The President's National Advisory Commission on Rural Poverty, The People Left Behind, Washington, D.C., September, 1967, pp 137-138.
8/ Ibid.

As it has been pointed out previously, the demand for beef, veal, and lamb is expected to expand significantly over the next generation. Thus, it would appear that, consistent with other agricultural policies, the best public interest may be to retain the present lands in forage. Perhaps, whatever land retirement acreages that may accrue should also be added to the grazing lands and forests of the public domain. This would not, of course, include that land that would be required for recreation and other non-surplus producing purposes. In this manner, the public land programs could be coordinated with the national programs designed to prevent the accumulation of agricultural surpluses.

Chapter IV - Section F
Emerging Objectives

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2. Clawson, Marion. 1967. The federal lands since 1956; recent trends in use and management. Resources for the Future, Inc.. Washington, D.C. Baltimore: John Hopkins Press. pp. 54-55.

3. Doane's Agricultural Service. Report of April 2, 1969.

4. Gardner, B. Delworth. "Transfer restrictions and misallocations in grazing public range." Journal of Farm Economics, Vol. XLIX, No. 1, Feb. 1962. pp. 59-61.

5. Ibid., p. 59.

6. U.S. Department of Agriculture, Forest Service. "The present Forest Service User Fee Study for Livestock." Prepared for presentation to the Secretary of Agriculture's Advisory Committee on multiple use of national forests. Appendix 1, Table A.

7. U.S. Department of Agriculture, Forest Service. "The present Forest Service User Fee Study for Livestock." Prepared for presentation to the Secretary of Agriculture's Advisory Committee on multiple use of national forests. December, 1967.

8. William, Willard F. and Thomas J. Stout. 1964. Economics of the livestock meat industry. New York: MacMillan. pp. 574-575.

SECTION G

ECONOMIC EFFICIENCY AND THE PUBLIC LAND POLICIES WITH RESPECT TO FORAGE

There is no evidence that in the past economic efficiency has been a principal criterion in public forage land management. As a consequence, the use of the efficiency criterion as a measurement of the success or failure of the public land agencies is inappropriate. Evaluations cannot be made in a vacuum, however. There must be some standard of comparison. It is meaningless to state that one policy is superior to another policy unless there is some standard of measurement. A policy must be poorer or better than something specific. To provide such a standard, economists have developed the competitive model, which later was expanded into the efficiency model when applied to public programs and policies. This model was used in several sections of this analysis for evaluation purposes.

The efficiency model has its limitations, especially in the evaluation of non-market, non-price phenomena. However, in the absence of other better measurements, it is the best model available. Even with this limitation in mind, it should be recognized, as Kenneth Boulding has pointed out, that the efficiency model can be expanded to include moral as well as exchange phenomena. One may wish to ask how much scenic beauty is desired to be preserved unmarred at the expense of roads, camps, and motels which would make that scenic beauty available to thousands of persons. (1)

Regardless of the evaluation of the efficiency model as a criterion for public policy, its use in government is spreading rapidly. The development of the cost benefit analysis for water resources development has been broadened into the Program Planning and Budgeting System for defense program analyses, for space exploration evaluations, and it is now being used to analyze programs of the Department of Agriculture, the U.S. Forest Service, and even state governments and state universities. There is a high probability, therefore, that in the future it will be necessary to consider public land policies more and more in regard to costs and benefits. The recent move to charge permittees the full market value of the privilege of grazing livestock on the public domain is another manifestation of the significance of this emerging policy issue. As a final summary of the evaluation of forage policies and practices, therefore,

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this technique will be cast in the framework of its contribution to or detraction from efficient resource use.

Efficiency and Maintenance and Developement of Public Lands

In Section B of this analysis, the efficiency model was used to derive a theoretical basis for evaluation of the maintenance and development practices of the public land agencies with respect to forage land. The general conclusion derived from an analysis of range land policies and from statistics gathered from the public land agencies was that most of the management efforts until recently were concentrated on prevention of deterioration and/or maintenance of the range lands. In this respect there is no evidence that the agencies have not done about as effective work as could be expected. They have developed management practices which have prevented further deterioration of the range land. They have used their power to control grazing to restrict use on critical areas, such as watersheds and overgrazed areas. Probably many of their policies relating to allocation were worked out to make their efforts in range land maintenance easier to enforce. By allocating the land resources to individuals who were most likely to be stable and permanent users of the range, they selected those who had the greatest interest in the maintenance of the range lands. By recognizing the stability of the local community as having a stake in range land maintenance, they could count on support from the local communities in their endeavors to concern themselves with the maintenance of range quality.

It is in the area of range development that questions arise as to the efficiency of the forage policies. In this area, conflicts of policies and guidelines are least perceptible. If the government assumes a proprietorship role, its course would be to expand investments to the point where the marginal efficiency of capital equals the marginal costs. Although government investments in range improvements have increased during the past ten years, they have not been made with a full recognition of this principle.

Even if efficient investment were to become a principal cirterion of range maintenance and development, there are several constraints under which the land agencies operate. First, the level of investment depends upon the amount of appropriations for that purpose by the Congress. It is doubtful that the Congress is guided by such economic principles in its appropriations. Second, research into the economics of range land improvements has not been carried to the point where, for a considerable portion of the land, the marginal efficiency of investments is known. Finally, a proprietorship position would require considerably more management of the range lands than the agencies are now prepared to provide.

The alternative approach used by the agencies had been to seek user cooperation in range improvement investments. This approach has also run into difficulties in attaining the investment optimum of the

lands. (1) When the users invest their own funds they expect to remain on the land until they have reaped the full benefits of their investments. Although the agencies have the power to compensate users for investments if their privileges are withdrawn, they can do this only if they have the necessary funds. Consequently, the policy to encourage the users to make permanent improvements conflicts with the flexibility criterion in allocation and use of range lands. (2) If improvements result in considerably increased carrying capacity of the range lands, the user will expect to be able to increase his units of grazing. This principle runs counter to the criteria of allocative justice used by the agencies. Consequently, in recent years it appears that the agencies have preferred to pay for the development investments themselves. For this reason, rapid expansion of development investments by users is gradually being discouraged. (3) The criterion of multiple use has also discouraged private investments in range improvements. This is because the permittees usually do not wish to invest a large portion of their own funds and labor improvements which will benefit other users besides themselves.

The current move towards charging the full market value for grazing privileges is another discouragement to the users from investing their own funds in range improvements. It is discouraging because they will receive no benefit which would encourage such an investment. They will have less funds to invest, and most will consider such investments the full responsibility of the Government. The charge of the full user cost differential may even encourage the mining of the resources. However, the development of Allotment Management Plans, and variations on them, do seem to be moving in the direction of encouraging user investment in public lands.

Efficient Allocation of Resources and the Allocative Policies of the Federal Land Agencies

From the standpoint of efficient resource allocation, the allocative procedures of the federal land agencies in selecting the initial permittees has led to a misallocation of the range resources. The initial permittees were not necessarily the most efficient ranchers, and their ranches were not of the most efficient size. However, as was shown in the preceding part of this section, efficient resource allocation was not the objective of the land agencies.

Once the original allocation was made, policies of the agencies to provide continuous tenure, and to permit the transfer of the privileges to individuals designated by the permittees, led to a market allocation of the range resources. Permits are now purchased at a market price and the economics of pricing will tend to place them in the hands of the most efficient users and the ones having the most efficient size of operation. There are, however, certain procedures still remaining which tend to prevent the market price from effectively performing its function of efficient resource allocation. The continuation of commensurability requirements and the limitation on permit size by the U.S. Forest Service tend to prevent efficient allocation.

The matter of the allocation of income between the users and the Government is a question of allocative justice but not one of efficient resource allocation. This latter issue does not concern us at this point.

The new method of assessing fees, which was put into effect in January, 1969, will probably have little influence upon the allocation of the range resources. Should the Government continue to allow the present users to designate the recipients of the privileges after they relinquish them, the value of permits will be reduced by the capitalized value of the additional fees charged. There will continue to be a capital value, however, because of the differential values of permits resulting from economies of scale, from different expectations of future values of range land, from different values placed upon ranching as a way of life, and from differences in short term expectations in price changes for beef, veal, and lamb. The fee charges, however, should have little influence on any of these factors. The difference in the capitalized value arising from the fees probably will be borne almost wholly by the ranchers. The Government will secure a larger income from the users, and the public generally will be relieved of a portion of the burden of range land administration and management. Greater flexibility in use of range lands by the public may result because a smaller capitalized value is paid for the purchase of privileges, and also because there will be less reason for users to believe that they have attained rights in the ownership of the public land.

Efficiency and the Stability of the Livestock Industry and the Basic Community

The concern of the public land agencies with stability is centered around the stability of the range livestock industry and that of the local community. It is usually assumed that economic efficiency and stability of an industry are complementary objectives. A firm or an industry that is efficient must also be stable, in the sense that it can withstand minor fluctuations in the industry and that bankruptcies and forced liquidations will not occur. An efficient firm will not overextend either its operations or its credit.

In previous sections it was pointed out that the livestock industry has become less subject to the beef cycles and to large

scale liquidations of herds when the price cycle moved adversely to it. It would be rash to attribute much of this stability to the policies of the public land agencies, since the public lands contribute only about 12 percent of the forage requirements of the cattle and sheep in the western states. For this reason, those practices designed to foster stability, such as commensurability, family size units, and dependency, are probably no longer of significant importance. At the same time they may operate to impede efficient resource allocation in other respects.

Stability of the local community cannot be considered an efficiency criterion. Non-farm communities are founded, grow and mature for the purpose of servicing the resource industries located in their vicinity. In the past, agriculture was instrumental in establishing and nurturing local communities. The small family farm tended to induce such growth more than did the large plantations and ranches. It is doubtful that agriculture today can perform such functions. As farms and ranches become more efficient their number will decrease and the farm population will continue to decline. The need for the service of the very small local community will, therefore, decrease also. The functional local community is also changing. Whereas in the past a functional community could be of the size of two thousand to four thousand persons, today, communities of 100 thousand or more inhabitants are required to provide the complex and expensive services needed by present day society. Such concentrations of population are beyond the power of agriculture and ranching alone to provide. The problem of functional local communities is critical. Its solution will probably require economic complexes comprised of more than one basic resource.

The new fee structure will not assist in providing greater stability to the present ranch firms. The small ranch operations are already earning less than adequate returns. An additional fee will add to their economic difficulties. If the fee is graduated in such a manner as to place the burden on the larger operations, this will impede the process of adjustment of ranch sizes to more efficient levels, because the larger firms will be comparatively poorer off.

In one respect the process of adjustment may be speeded up through a changing fee structure. By making the small ranchers poorer off, they may be either forced or induced to leave the ranch business, thus encouraging more efficient resource allocation. The effectiveness of this procedure must be balanced against the fact that the assets of the small rancher in the form of capital value will be reduced. As a consequence, his ability to adjust to non-ranching activities may likewise be diminished.

Finally, it may be pointed out that small ranch enterprises may be much more stable through a policy of encouraging cooperative grazing associations, either of the type already established on some of the range land, or through the Farmers' Home Administration type of organization. Such organizations, while they can be helpful, have, nevertheless, experienced a large number of failures. Their success will depend upon the economic efficiency with which they are established.

Economic Efficiency and its Impact upon Multiple Uses and Conflicts Among Uses

Multiple use is complementary to efficiency if the data necessary to make the proper calculations are available. As was pointed out previously, however, not all uses have a market value or a price. Consequently, their marginal value products cannot be determined objectively when utilizing the procedures of the U.S. Forest Service and the Bureau of Land Management. In the case of the forage range lands, little physical data upon which costs can be determined are available. It is not known, for example, how much one hundred man days of recreation will decrease grazing in terms of animal unit months, or how an additional one hundred AUM's of wildlife grazing will restrict the number of AUM's of domestic livestock grazing. It is agreed that at this time one cannot expect that such calculations can be made to the fineness assumed by economic theory. However, analyses can be made within broad margins of error.

Once such calculations are made, further studies can be conducted to determine how much of one multiple use can or should be expanded at the expense of other uses. Some form of cost benefit analyses can and should be made in which values can be placed upon the non-market values to be obtained from the range resource. It has been suggested by some authorities that a concept of social marginal product be developed in which non-market values and welfare considerations may be included along with market values and price in deciding on alternative uses. (4)(3) Marglin has suggested that welfare and non-market benefits be given weights such that the optimization of total benefits can be treated as though they all have a market value. (5) An approach similar to this has also been suggested by Kenneth E. Boulding in his presidential address before the American Economic Association in December, 1968. (2) A slightly different approach is suggested as Alternative 7 in the next chapter.

Until the management agencies secure some tools for the measurement of the various multiple uses, decisions relating to competitive uses will have to be based upon subjective valuations and upon the relative strength of the various pressure groups. Such a situation makes for inefficiency in administration and waste in natural resource allocation and use.

Economic Efficiency and Other Land Use Policies and Issues

Flexibility in the sense of mobility of resources between users and uses is an essential element in economic efficiency. Optimum allocation of resources cannot be secured unless production factors can be moved from one use to another. On the other hand, complete flexibility will create uncertainty and insecurity in tenure of the public lands. Uncertainty usually encourages inefficiency in operations. The central issue between efficiency and flexibility, therefore, is one of securing the best compromise between security and stability of tenure and mobility of resources to meet the demands of the future for changing uses of the range lands.

Production control of agricultural crops generally is in conflict with efficient resource use. Since the decision to institute production control was decided by political and welfare considerations rather than by purely economic ones, greater efficiency of land use will be attained if all branches of the government cooperate in the attainment of the same goals.

Rural poverty and its alleviation is not an economic efficiency issue. Neither can it become an issue of the public land agencies alone. Any program aimed at the elimination of rural poverty will involve activities by the public land agencies. However, it must be a coordinated program involving many activities and many agencies. The land agencies cannot be expected to solve these problems alone.

The problems of economic efficiency as they relate to the public land policies and issues are many and are interrelated. One of the greatest obstacles to the attainment of a high degree of economic efficiency is the lack of basic data on which to base analyses. In general agriculture, much basic information has been secured through experimentation and research which in turn was used to construct meaningful production functions. Such information is lacking in range land uses and benefits. The information that exists is of a physical character. By expanding knowledge of the relationship between physical inputs and outputs first steps have been taken towards a meaningful economic analysis of range land uses. This is only the first step. It is also necessary to relate the physical capabilities of the resources to the demand for them. An inventory of the best uses to which the public forage lands can be applied involves both an analysis of the physical capabilities of these lands and the uses to which the capabilities can be employed. It also requires a knowledge of what quantities of land of these capabilities are needed or demanded by the economy.

Reference Material

Chapter IV - Section G
Economic Efficiency and the Public Land Policies with Respect to Forage

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CHAPTER V - ALTERNATIVES TO POLICIES AND PRACTICE

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SECTION A

ISSUES POSED BY THE PRESENT SYSTEM OF PUBLIC LAND FORAGE POLICIES

Thirty-five years ago when the Taylor Grazing Act was first being implemented, range maintenance was the primary object. At that time both of the major land agencies, the U.S. Forest Service and the Bureau of Land Management, accomplished a great deal. Based largely on the experience of the U.S. Forest Service, both agencies had developed a subjective approach to their management decisions. This subjective approach did very well for nearly all range management activities. Range management required only that use be restricted to the carrying capacity of the range lands under sustained yield requirements.

When range development is considered in the sense of positive investments to improve the range beyond its original capacity, or to rehabilitate the range lands that have previously deteriorated, then the public land agencies do not measure up to the requirements of the efficiency model set forth by economic theory. The introduction of other objectives of the two agencies such as stability of the family ranch and of the rural community, makes the attainment of the development ideal even more difficult.

From the first, the two large land agencies considered their obligation to be as custodians rather than as landlords. Consequently, they placed social policy objectives above income maximization. The social objectives of these agencies were consistent with the goals and objectives employed in the disposal policies of other federally owned resources. Consistent with this same social philosophy, the actual allocation practices of both agencies were developed to attain these same social objectives.

The allocation practices resulted in the permitted ranchers getting their forage at a lower cost than those who did not have permits to graze on the public range. Also, since it worked out that the permittee users could control the transfer of their permits, they had an opportunity to build up a capitalized value in the permits. The possible injustice and unfairness in treatment of individuals excluded from the largess granted to the permittees as a result of these social objectives, is probably no more flagrant than in past and current examples of similar discrimination in government agricultural programs. Problems arising out of the initial allocations of grazing privileges are over for the most part. The main concern now is how to proceed from here.

No system is perfect, and the implementations of the policies and objectives of the U.S. Forest Service and the Bureau of Land Management were no exception. The problems of today grew out of the circumstances of the past, including:

1. The Western livestock ranch does not adapt to the land limitations associated with the homestead laws. To make a living at all, the small ranches had to utilize the public range in addition to their own land.

2. The goals of social and economic stability, that were part of the allocative policies of the two agencies, included the preservation of the family unit, the growth of the local community, and the stability of the livestock industry and of the local community. Other allocative criteria are the commensurability requirements of the two agencies and the limitations of numbers and prevention of monoply that were set up by the U.S. Forest Service.

3. Because economic efficiency did not enter into the allocative procedure, the permittees were placed in a position where their privileges would acquire a capitalized permit value.

4. Actions of the federal agencies, such as tacitly condoning the sale of permits through their permit transfer regulations, and the repurchasing of these capitalized values in a few instances due to war and national defense situations, led many of the ranchers to feel that they had some possessory right in the land.

5. The economies of scale of the livestock industry are such that a ranch has to have around 200 animal units to break even. The allocation and stability policies of the Bureau of Land Management and particularly of the U.S. Forest Service have been such that even the reallocation of permits today are not allowed to respond to the free market without some constraints. This has contributed to the proliferation of small stock ranches in the West, a large percentage of which cannot be profitable.

6. The ability of the public land agencies to cope with the problems of allocating range privileges among users, difficult as it is at best, is made more difficult by range land improvements. The present system of allocation, and reallocation, does not lend itself to easy decisions in the event that a permittee should grow a good deal more grass than his privileges provide.

The circumstances above are now placed in a setting where the two agencies have imposed an increased grazing fee on the user ranchers that will substantially recapture the capitalized value of the permits in 10 years time. The impact of the new fee on livestock firms will be depressive. The "average" size cattle ranch in the West is now at the break-even point after paying himself and his family wages for their labor. The additional fee will come off the top of the profits in an industry which has very low profits. Since the range livestock industry is characterized by small ranches, it is likely that an increase in fees would decrease the net earnings of most of the ranchers.

The increased fee structure also will probably discourage rancher participation in investments in improvements and induce more exploitative ranching methods on both the public range and the private base property. Since all livestock producers will not be faced with the increase in fees, it is unlikely that the cost will be reflected in the price of meat. Its impact will be on the current user in the form of higher costs of operation and, consequently, smaller profits. Also, the rancher will lose the capitalized value of the ranch permits. For many of the smaller ranchers with permits, the combination of the two will make their situations more difficult than they now are, and will make their circumstances for selling the property less favorable.

The impacts of the grazing fees on the net personal incomes of the counties was not great in 1968 using the old fee structure. However, the impact of the new fee 10 years from now will be more serious in all but a few areas. The impact in some areas will be very serious.

The regional and national state in the range livestock industry is limited for the most part to the effects on the supply and price of meat. Since only 3 percent of the supply of cattle and sheep is directly supplied from range forage, the impact of the new fees on the cost of beef and lamb nationally will not be great. However, for the Western region, the supply of forage secured from the public lands amounted to 12.1 percent in 1966. If the lands were improved to the levels estimated by the several agencies, they could provide 19.4 percent of the total requirements for the West. It is also believed that if a better system for classifying the land were devised, it is very likely that a relationship could be developed with some ranchers whereby some land could be managed more intensively to the marginal return level. This might provide a substantially increased amount of forage at little expense to the Government, while still protecting all governmental objectives and standards.

In most cases the stability criteria to which the agencies have conformed has been attained. The range livestock industry is more stable today than previously; the family farm has been preserved. The local community has been maintained and stabilized. The important question, however, is whether or not these objectives are relevant for today and for the future.

Certainly the stability criteria used have not led to efficient allocation of resources. The family farm defined in terms of small ranch operations does not provide a sufficient income to maintain adequate standards of living. Range lands have not been developed to their fullest economic potential. Possibly some flexibility to meet changing future needs has been sacrificed.

Small local communities no longer perform the services for neighboring agriculture that they did in the past. Larger units are necessary in order to become functional communities. To provide stability for the local community through control of public land resources is probably no longer possible, if it ever was. Resource development in agriculture and in forest and mineral lands very likely will not be as directly related to community growth as it was in the 19th and early 20th centuries. The problem of rural poverty also will probably not be solved by providing a large number of very small farms. This issue will become an essential one in the next half century.

Finally, all these circumstances now must be viewed from the increasingly complex situation imposed by rapidly advancing participation in the several other land uses. The conflicts of multiple use appear to be coming very serious within the next few years if a more rational means for making comparative resource judgments is not developed. An important part of these comparative judgments is a more useful form of land classification for adaptation to economic analyses. Another concern is for a reasonable method to compare values of the amenable resources, such as wilderness beauty and solitude, with the more prosaic values of grass and soil. Emerging from all this seems to be the outline of four new objectives. The objective of flexibility has been apparent for some time. However, those of changing position from a custodian to a landlord, concern for rural poverty, and integrating public land policy with agricultural policies concerning surplus and production control are of more recent vintage.

The alternatives following, together with the catalog of alternatives in the appendix, present some circumstances that may be of value in attempting to solve some of the complexities that have developed. These are submitted together with some of the advantages and disadvantages involved. An attempt has been made to place them in a logical and orderly sequence. This has not always been possible because of the cross-over in associations and interests. Also, the presentation of some thoughts became so complex that whole systems had to be devised to present them. In a few instances where it appeared to be valuable, portions of these systems were shown. A full system is shown in a plan outline for determining land use.

SECTION B

ANALYSES OF PRINCIPAL ALTERNATIVES

Alternative No. 1

That the Federal Government Dispose of Its Public Lands Presently Used for Grazing

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1. Introduction

This alternative proposes that the Federal Government divest itself of the public grazing lands.

The major premise is that private ownership is more efficient than the Federal Government as a manager of resources which may be developed commercially. Furthermore that the economic health and development of the nation is better served by placing these resources in ownership and management closer to the user.

The disposal of the land could be made to private owners in many different ways.

Speculative elevation of prices would be controlled by the rate at which the land was placed on the market. There is sufficient acreage to sell at a high enough rate to maintain a stable market. The Federal Government has experience with this in many commodity markets.

The purpose of this alternative would be partially served if title was transferred to a lower level of government or local semi-public body. These grazing land recipients could be states, counties, towns, non-profit grazing districts, or schools.

2. Means and Methods

A. That the Federal Government Dispose of Its Grazing Lands.

The payment by the recipients of the land could take several forms and be made in several ways. These might be trades (by states), cash or loans. The level of payments and interest rates will be either low or high depending on whether the Government has chosen to make this disposal as a custodian assisting in regional and industrial development or as a proprietor obtaining his maximum income from the land sale.

(1) Advantages

The industry or local public organization could more easily invest in and manage these lands to their economic optimum.

In private ownership, economic efficiency would tend to cause the land to move into the hands of the more efficient operators. This will tend to reduce the cost of livestock and/or increase the health of the industry.

Federal Government Administrative costs would be reduced by the release of responsibility for management of this complex, far-flung resource.

The state and local tax bases would be increased by transferring this land to private ownership. The advantage that this disposal appears to have is qualified to the extent that (a) states presently do have the authority to tax the possessory interest in the grazing permits or leases. This is being done in California and Washington. 1/ (b) States now participate in revenue sharing returns of portions of grazing fees. These are U.S. Forest Service 25 percent, and Bureau of Land Management 12-1/2 percent on most areas. The loss of these incomes would reduce the apparent gain from the new real estate tax source. Taxing rates vary too greatly to make a comparative comment, but this subject may deserve additional consideration by the states.

Disposing of the federal lands will take the Federal Government out of the controversies over land use management.

(2) Disadvantages

A most significant disadvantage to disposal of public lands would be the loss of flexibility of use of the lands for future needs. Without exact knowledge as to future public needs for the public lands, present sale infers the conclusion that future needs will not change, a conclusion that cannot be justified, or that normal economic forces will ensure that future needs will be met. It forces reliance on utilizing the power of eminent domain and the acceptance of associated costs when recapture of land becomes necessary for public purposes.

Lands under private ownership would lose all or most of their multiple use values. Most affected would be wildlife and non-economic recreation interests. Watershed management also becomes exceedingly difficult.

1/ State Taxation of Possessory Interests in Graxing Permits and Leases, Volume 4, Chapter VI, Section B.

Local government agencies may be more susceptible to local political winds than federal agencies with the result of lowered stability of grazing management. Under private ownership, resource production control becomes a most expensive practice such as the Soil Bank, whereas under federal ownership, simply reducing or stopping the useage is effective and economical.

B. That the Federal Government Dispose of Grazing Lands to State, Regional or Local Governmental Units.

This alternative would relocate the ownership and management of the grazing lands to the locality in order to improve the management response to local problems.

The quasi-governmental units might be schools which would obtain an income and appreciation of value; or a non-profit grazing district similar to a public utility district or port district.

(1) Advantages

A source of income is provided for school and governmental districts.

Local control is obtained for the grazing lands.

Grazing districts may own and manage lands which are of a varied character and not suitable for subdividing into as many parcels as there are present user-permittees.

In the case of state ownership, wildlife management would be improved greatly. At the present time most wildlife in a state is managed by the state, even when it is found on federal lands. This poses problems because wildlife management without habitat management cannot be complete.

A local governmental agency could manage for the optimum multiple use combination.

(2) Disadvantages

The existance of state boundaries would hamper the efficient management of grasslands which are continuous between states.

Local government agencies may be more susceptible to local political winds than federal agencies with the result of lowered stability of grazing management.

For the states or the other groups to undertake the management of these areas would require a major increase in their land management staffs. The overall national result could be a net increase in management manpower from that required by the federal agencies.

C. That the Federal Government Partially Dispose of Its Grazing Lands.

(1) Advantages

The alternative of partial disposal of the federal grazing lands is generally discussed in terms of disposal of isolated or smaller tracts of land. Potential disposal of Section 15 lands and Land Utilization Project lands are included within the scope of this alternative.

Disposal of these lands will increase the efficiency of administration of federal grazing lands with little detrimental effect upon the general public interest. Many of these tracts are interwoven with private lands and private ownership will increase both the efficiency and security of tenure of the total private operation.

(2) Disadvantages

One of the most critical problems facing agriculture today is over capacity in crop production. Under this alternative, Land Utilization Project lands with crop growing capability equal to some land now in cultivation may be disposed from public ownership. If placed in private ownership they would probably be planted to wheat and feed grains which are now in excess supply.

D. That the Federal Government sell Grazing Lands to Permittees at Appraised Market Value.

The objective of this alternative is to give present permittees an opportunity to purchase the land, which they now graze, at an appraised market value.

(1) Advantages

This will enable the permittees to obtain the land at a market cost and be protected from the bidding of speculators.

This will stabilize the transition of the land from the Federal Government to private ownership.

(2) Disadvantages

All permittees would not be financially able to purchase the land. Most ranchers have paid the capitalized value of the permit when it was acquired.

Many ranges are not suitable for division and must be used in common by several ranchers.

E. That the Federal Government Sell Grazing Lands to Permittees at Market Value Less the Appraised Value of the Permits.

This alternative recognizes that about 60 percent 2/ of the permittees have purchased their privileges at market price. That in different instances 3/ the Federal Government has paid the permittees for the loss of these values. Outright disposal of the public grazing lands will result in a loss to the permittees of the capitalized value of their permits. This would be particularly severe in the cases of those with recently purchased permits. This alternative is intended to correct this potential inequity.

(1) Advantages

This recognizes the present investment of the permittees in their privileges and provides economic justice in transferring ownership of the land from the Federal Government to the permittee.

This alternative eliminates the necessity for selling the permits at appraised value.

(2) Disadvantages

This alternative is in conflict with the positions of the U.S. Forest Service and the Bureau of Land Management that the permittees have no rights in the permits.

F. Provide Low Interest Rate Loans to Small Ranchers to Facilitate Increasing the Ranches to the Minimum Economic Unit.

This proposal would utilize the occasion of the disposal of the public grazing lands as an opportunity to help the small rancher who has been operating a small 4/, less than economic unit size ranch and been unable to accumulate the capital to expand out of the uneconomical size range. For these ranchers, low interest loans would be provided to assist in purchasing the necessary land to increase their operation to above a "break even" size.

(1) Advantages

Help small ranchers get above a "break even" size where they can stand alone.

2/ Volume 2, Chapter III, page III-96, County Questionnaire.
3/ Volume 3, Chapter IV, page IV-68, Compensation for Loss of Permits.

(2) Disadvantages

It is very hard to work out the practical and political aspects of the program.

This could be a rare opportunity to help the small ranchers whose economic positions are quite poor. The Eight County Questionnaire Summary (Volume 2, Chapter III, page III-96) shows that for ranches under 150 animal units an off-ranch income of 47.5 percent was necessary.

This proposal would require careful study to determine the feasibility and to develop a program.

G. That Federal Government Grant Grazing Rights in Perpetuity.

This alternative has many of the characteristics of selling the grazing lands to the permittee with the condition that the Federal Government retains all rights in the land except the right to the forage resources. To the extent that the use is granted for an unlimited period this practice resembles the Allotment Management Plan of the Bureau of Land Management.

(1) Advantages

The primary advantage to this system is that the permittee will benefit by maximum security of both tenure and investment.

This will result in increased investment on the public land.

Since the Federal Government retains ownership the land is still available for other uses at a much lower cost than would be the case if the rancher also had a title.

(2) Disadvantages

Giving permits in perpetuity would tend to increase the feeling of ownership and magnify the conflicts of use between the permittee and other users.

Flexibility of use to meet future changing needs would be decreased as compared to term permits.

On reductions or recapture, the Federal Government would be required to compensate for loss of privileges and cancellation of permit.

Alternative No. 2

That Federal Government Retain and Manage Its Grazing Lands to Obtain Optimum Maintainance and Development of Its Lands

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1. Introduction

Adoption of this alternative is based upon the concept that the national public interest requires that the public lands be retained and managed in the most productive condition for their highest economic and social uses.

2. Methods and Features

A. Extend the Present Term Permit Limit of 10 Years to 20 Years for the Purpose of Increasing the Security of the Permittee.

(1) Advantages

Permittees given extended permits will invest greater private funds in the public lands in the form of range improvements. In addition to greater inclination to invest on the part of the permittees, the lending institutions will be less reluctant to loan money for investment purposes if the security of tenure is increased. This fact is evidenced by statement of the 12 loan and appraisal firms interviewed in the Western Region to determine loan policies. These institutions indicated that among other criteria the security of tenure was an important factor in whether a loan would be made for range improvement purposes. Temporary permits or licenses are given no loan value.

(2) Disadvantages

The primary disadvantage to this system is the fact that permittees may be given a false sense of security in the land. By granting a 20 year permit, the permittee will feel that he has been given use of the land for 20 years regardless of contingencies. In reality, permits are subject to reduction, suspension, or cancellation for numerous reasons including range deterioration, change of priority of use, violation of rules, regulations, and statutes.

With the enlargement of permits to 20 years, the flexibility for changing uses to meet changing needs will be reduced. However, by staggering the permit maturity dates equally throughout the 20 year period 5 percent of the permits will mature each year thereby assuring some degree of flexibility.

B. That the Federal Government Establish a Low-Fixed Fee Combined with the Requirement That the Permittee Invest a Specific Amount in Range Improvements.

(1) Advantages

This alternative is designed to increase the permittee investment in the public land while at the same time capturing full value for use of the land. The user would be benefited by making investments in the land in lieu of full cash fee. This would reduce his out of pocket expense for use of the land and at the same time increase his range investment in the public land. The user contribution would not be limited to cash. Therefore, the user could contribute labor thereby utilizing his slack time. Because permittee investments in the land are in lieu of cash fee the Federal Government would retain full ownership rights in the improvements.

(2) Disadvantages

A low fixed fee will result in a reduced income to the Federal Government. The administrative costs of determining whether a full equivalent value were in fact contributed by the permittee would be substantial. Also, there would be an expense to the agency in following up to see that the contributions were actually made and made properly. This alternative encourages investments with no regard to need of the land itself or for efficient investment.

C. That the Federal Government Establish Authority and Funding to Compensate Range Users for the Value of Their Range Improvements in the Event of Cancellation of Grazing Privileges.

This proposal is couched in different terms depending upon the source. The different approaches vary from compensation for the value of range improvements to compensation for the capitalized value of the permit. Actions giving rise to compensation vary from any reduction of permit, to substantial reduction, to cancellation of the permit. Respective proposals have been vague as to whether the compensation would be made for any reason or whether cancellations resulting from wrongful or neglectful actions of the permittee would not justify compensation.

At the present time individuals who appropriate public lands are required to compensate the permittee for range improvements. The Bureau of Land Management provides that an applicant agency or department for withdrawal of lands must compensate the permittee for range improvements. This authority is by regulation and only applicable where the applicant agency has authority and funding to compensate the permittee. In the absence of use of the withdrawal procedure or lack of authority to pay for the improvements the agency or department cannot be made to pay for the improvements. This specific alternative would require all agencies or departments to compensate permitees for the undepreciated value of range improvements whenever a permit is cancelled and a federal agency acquires the use of the federal land.

(1) Advantages

The most significant advantage to this alternative is that the public range lands would benefit by additional private investment. The extent of additional private investment is not ascertainable. However, the attitude expressed by permittees in the 75 Ranch Study is that they would make additional investments in the range if given greater security in their investment. Permittee investment assists in developing range, utilizes slack permittee time and takes advantage of the specific knowledge and experience of the permittee.

An important factor which must be considered is the greater flexibility which will result. If the public land agencies are authorized to compensate users and given funding to make the compensation for range improvements in the event of cancellation of grazing privileges they will be able to change the use of the land without inflicting inequities upon users of the range who have made investments. As a result there will be greater flexibility in management of the land for changing needs of the future.

(2) Disadvantages

There would be an additional immeasurable expense to the Federal Government.

Ascertaining the value of the permittee's range improvement may be difficult because of the joint Federal-permittee cooperative improvements. There may also be a difficulty in ascertaining an equitable basis of compensation for range improvements which have been kept in continuous repair or maintained in productive condition.

D. That the Federal Government Establish Authority and Funding to Compensate Range Users for the Capitalized Value of Permits Upon Cancellation or Reduction of the Permit as a Result of Changes in Land Use.

Permittees have been compensated for the value of permits when they have been cancelled because of war or national defense purposes. Special legislation has also been enacted authorizing payment by the Bureau of Reclamation for one land purchase from the Navajo Indians which probably included the capitalized value of the permits. It is the purpose of this alternative to authorize payment for the capitalized value of permits whenever they are cancelled or reduced because of changes in land use at the request or convenience of the Federal Government.

(1) Advantages

The advantage of this alternative is that permittees who lose their permits due to no cause of their own, and who suffer financial loss, will be compensated. This should result in substantial and significant increases in private investment and development of the public range. Seventy percent of the ranchers interviewed in the 75 Ranch Study expressed a desire or willingness to finance their improvements if the Federal Government would assure them recovery of their costs through compensation. More compensation for the value of range improvements does not include compensation for the loss of the capitalized value of the permits. This will also cure the inequities caused by compensating permittees when permits are canceled for war or national defense purposes, but not when land is classified for other use.

The result of compensation for loss of permits will be that permittees are provided a financial resource which can be used to make adjustments necessitated by dislocation upon cancellation of the permit.

By requiring compensation for cancellation of permits, the agencies will require additional funds to effect land reclassification. This will, to some degree, hamper the agencies in changing land use. However, it will provide Congress with a continuing opportunity to review agency land reclassification through the funding process.

(2) Disadvantages

This alternative expressly recognizes that the permittee has a "right" in the land and is contrary to present stated policy of all agencies. The cost of administering the lands would be increased by an indeterminable amount. There would be an additional administrative expense in ascertaining the values to be paid upon cancellation of permits.

E. That all Range Improvements be Made by Permittees.

(1) Advantages

This alternative will give maximum assurance from the permittee's standpoint that range improvements made on the lands will most benefit grazing. Present opinion as evidenced by the 75 Ranch Study indicates that permittees feel that many range improvements made on the range by the Federal Government are not the best improvements for grazing. This system also utilizes maximum permittee experience and knowledge of land.

(2) Disadvantages

The type of investments which would be placed upon the range by permittees would not likely be as beneficial to multiple uses of the land as those by the Government which is charged with managing the lands for multiple use. Therefore, giving the permittee the authority to make all range improvements would hamper the agency in its overall management of the lands. Many range improvements which are best for the range cannot be separated ranch by ranch. As a result the public range benefits from federal range improvements which are made across ranch borders. This alternative would severely jeopardize these types of improvements. Over 80 percent of the users of the public range are ranchers with less than 200 AUM's per permit. Many of these ranchers have relatively small operations and would not be in a position to make the necessary large scale investments which may be the most beneficial to the land. If the Government were not authorized to make these improvements they would in many cases not be made.

F. That All Range Improvements be Made by the Federal Government.

(1) Advantages

Permittees would not lose their investments when the permits are canceled because there would be no private investments. The Government would therefore be placed in a position of greater flexibility in treatment of the land for future uses because of fewer restrictions in changing uses. Multiple use investments and investments on large scale across ranch borders could be made with the least difficulty.

(2) Disadvantages

The primary disadvantages to this alternative is that the lands would lose the benefit of private capital and maintenance expenditures which in 1966 was over $1.85 million. This alternative would also place the investment level at the total discretion of Congress in their appropriations. The result is that investments may not be made at a level which is consistant through the years.

If all investments are made by the Federal Government, an indeterminable loss of efficiency may be sustained. This assumption is based upon the 75 Ranch Study which disclosed a user opinion that Federal Government investments on the public range were made less efficiently than possible.

If all investments are made by the Federal Government to the exclusion of user participation the users will exercise a reduced degree of maintenance and care with the result of reduced life of the investments.

Alternative No. 3

That the Federal Government Manages Its Forage Lands Under the Concept of Government as a Proprietor

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1. Introduction

This alternative is based upon the concept that the Federal Government should manage its lands as a proprietor to assure efficient use of natural resources, with flexibility to meet future needs, and to obtain optimum return from use of land.

The primary administrative practice which would result from adoption of this policy would be a change in pricing systems. Fees charged by both the U.S. Forest Service and the Bureau of Land Management would be increased to market value. This alternative may be accomplished through competitive bid or appraised value or a combination of the two.

2. Methods and Features

A. That the Federal Government Establish Grazing Fees by Competitive Bid.

(1) Advantages

The primary advantage of establishing grazing fees by competitive bid is that the Federal Government will realize maximum revenue from use of the lands. The two agencies which presently allocate forage by competitive bid are the Department of Defense and the Bureau of Indian Affairs. The Department of Defense realizes rates ranging from $1.00 to $3.83 per AUM. (Appendix Table VII-27). The Bureau of Indian Affairs realizes an average charge of $1.59 per AUM. It cannot be assumed that the Bureau of Land Management and U.S. Forest Service will realize an equivalent or greater average charge; however, the charges are valuable for concluding that a fee based upon competitive bid will substantially increase the revenue from grazing on public lands. Greater funds would therefore be shared with local governments through revenue sharing. Also, this alternative would establish greater equity to non-users of the public lands who could not qualify because of the prior use criterion presently used.

(2) Disadvantages

A most important consideration inherent in this alternative is the effect that charging a full market value fee will have on the attitude of the permittee and its resultant impact upon multiple use.

Present permittees are charged a fee below full market value and therefore recognize the obligation of multiple use of the lands. If a full market value is established, permittee attitude may change to expect full use of the lands and thereby tend to freeze multiple use of the land as it presently exists, making it more difficult to bring additional multiple use onto the lands.

Of greater impact, however, would be the impact on security of tenure. Present term permittees are assured the preference right of renewal by statute or regulation. If the pricing system is changed to competitive bid, there will be no preference right of renewal. As a result permittees will have no assurance that permits will be renewed. The effect of this condition is not ascertainable. However, it probably can be assumed that private investment in public range land will be curtailed. With 72 percent of the federal land needing additional range investment any reduction in present private investments will have a detrimental affect on the maintenance and development of the public range unless the Federal Government increases its investments.

Large operators will have advantage over smaller operators because of their ability to secure funds for bidding. However, the system may encourage excessively high bidding with the result that ranch operations may fail.

Permittees will lose the present capitalized value of the ranch permits.

Because the exact fee level which a competitive bid will bring cannot be anticipated the resultant impact cannot be established. However, under an orderly competitive bid system in which the public lands are made available at regular intervals it can be assumed that the impact would be at least equivalent to and may well exceed that of the announced Bureau of Land Management and U.S. Forest Service fee increase. Under the increased schedule the impact on net personal income of Lemhi County would be 3.9 percent, Elko County, 3.0 percent, Johnson and San Juan County, 2.5 percent and 2.2 percent, Graham and Blaine County, 1.6 percent. Baker and Chaves County are at levels below 1.0 percent.

It is difficult to assess the impact of the increased fee on the supply and price of meat. However, with only 3 percent of the supply of cattle and sheep directly supplied from the public range it is anticipated that the costs of fees would probably not be passed on to consumers but would be borne by the permittees.

B. As a variation to strict competitive bidding for range privileges, privileges may be granted by competitive bid with a single payment plus annual rental equal to taxes which would be paid to the Federal Government if the land were privately owned. This variation is based upon the concept that a market value should be captured by the Government through competitive bid with the additional feature of requiring payments be made to the Government equal to those paid by private owners in taxes.

(1) Advantages

The distinguishing advantage to this variation is that by requiring the permittee to make annual payments equal to taxes which would be paid if the land were privately owned, there is an appearance that the permittee and the private land owners have identical cash outlay, i.e. large cash payment by permittee when the bid is obtained which parallels initial cost of private property purchased and annual payments by permittee which parallels taxes paid by a private land owner.

(2) Disadvantages

It is difficult to prorate annual assesment on a per acre basis where joint grazing is allowed. Competitive bid would take into consideration method of payment and would not in fact change the actual fee paid by the permittee.

A significant disadvantage to this system is the advantage that would be given to large operators who are in a position to make large down payments. This would prevent small operators from effectively competing for use of the range resource on an equal level because of inability to make a large down payment with resultant contraint on small operations moving toward efficient operation.

C. That the Federal Government Adopt a Uniform System of Pricing Among All Agencies.

The concept seeks to make administration more efficient by use of one system rather than a variety of systems. In addition, it is urged that the users of the range should not be subjected to different pricing systems because of the inequity of charging different prices to different users.

(1) Advantages

The advantage to this system is that permittees are charged uniform prices regardless of the agency with jurisdiction over the lands. This system prevents an inequitable situation of different fee standards based not upon value of forage, but rather upon agency practice.

(2) Disadvantages

The important disadvantage to this system is that if a uniform system of pricing is to be decided upon, a choice of pricing systems should be made. Discussion of this alternative cannot be made in a vacuum. A choice to bid competitively will result in loss of security of tenure to the permittees on U.S. Forest Service and Bureau of Land Management land to the extent that the preference right of renewal is lost. The appraisal method will cause these agencies an indeterminable but quite substantial expense of administration.

A single uniform system of fees assumes that the various agencies have uniform social goals or that the social goals are non existent. To make this assumption is to disregard the particular social objectives of the respective agencies. As discussed in Chapter II and III for example, the objectives of the Bureau of Land Management and U.S. Forest Service differ from the Department of Defense and, therefore, until reconciled require different fee systems. Objectives of stability and protecion of small operators may be inconsistent with a competitive bid fee system which is based upon objectives of income return to the Federal Government and equity to non permittees.

Alternative No. 4

That the Federal Government Secure the Full Market Value of the Permits in Such a Manner as to be Fair and Equitable to Present Users

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1. Introduction

Under this alternative the Federal Government would capture the full value for use of the public lands, while at the same time recognizing that permittees have a capitalized value in their permits which would be lost if cancelled.

2. Methods and Features

A. That the Federal Government Place a Fixed Value on the Permit and Capture All Future Increases at Time of Transfer by Taxing the Excess Value at a 100 Per Cent Rate.

(1) Advantages

The advantage of this alternative is that present permittees would not lose present capitalized value. However, the Government would receive all increases which would accrue in the future.

(2) Disadvantages

The Government would not receive full value of the permits. This would be a recognition that current permittees hold a right in the land.

B. That the Federal Government Cancel All Permits and Reallocate, Compensating Present Permittees for Value Which They Paid for Permit.

(1) Advantages

This alternative is designed to compensate permittees for the value of their permits and reallocate the permits under particular systems adopted for the future. By compensating for the actual value paid for the permits, the Government will prevent those who have purchased permits from sustaining a loss. However, those who have not purchased the permits but who have either held the permit from the inception of the present system of allocation or have been given the permit will not be compensated for a value for which they did not pay. This will prevent a windfall to those who have not purchased permits.

(2) Disadvantages

This system, also, recognizes that a right has accrued to permittees. A significant disadvantage to this system is that present

permittees who have "something of value" will lose the value without compensation. The fact that they have received the permit by gift or inheritance does not detract from the fact that there is a value in the permit which will be lost.

C. That Grazing Privileges be Allocated by Lottery which is Restricted to Residents of the County Who Own Ranch Properties Contiguous With Public Grazing Lands. Commensurability Requirements Would Be Eliminated.

(1) Advantages

By requiring that forage resources be allocated to land owners contiguous to the public land, there would be a stabilizing effect on local economies. The primary intent of this alternative, however, is to establish equity to non-users of the range by giving them equal opportunity to graze on the land.

(2) Disadvantages

As a form of allocative justice, this system does not provide a more equitable system than the present system based upon prior use. By adopting a system of lottery to allocate privileges, the security of tenure will be adversely affected with resultant instability of the livestock industry. There would be an elimination of non-contiguous land owners who may be able to make more efficient use of the land.

D. That Increases in Grazing Capacity be Allocated on Basis of Need.

(1) Advantages

This alternative is designed to assist in stabilizing the livestock industry by allocating increased grazing capacity to permittees and non-permittees on the basis of need. The advantage would be that those ranchers operating in conditions of inefficiency and poverty would benefit from increased grazing capacities. This will assist in benefiting rural poverty.

(2) Disadvantages

The primary disadvantage to this system is that those who can not demonstrate the greatest need for the increased capacity will in some degree lose their incentive to improve the land. Those with greatest need may be least efficient. As a result this alternative may encourage inefficient operations.

Alternative No. 5

Federal Government Manage Its Forage Lands to Optimize Efficient Resource Use

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1. Introduction

This Alternative is designed to promote efficient utilization of the forage resource as an objective in allocative policies of the Federal Government. Present practices of forage resource management and allocation are designed to stabilize the livestock industry and to protect the small rancher against monopoly of the federal range by the large rancher.

2. Methods and Features

A. That the Commensurability Requirements and Upper Limit Restrictions be Eliminated.

(1) Advantages

Present Bureau of Land Management requirements of commensurability prohibit transfer of grazing privileges to individuals who do not control or own base property with a production capacity to properly support the number of livestock for which the license or permit is sought during a specified period. The U.S. Forest Service requires base property ownership. Elimination of this requirement would allow privileges to be fully transferrable with the result that they would eventually be transferred to those who can make the most efficient use of the privilege.

Elimination of upper limits would allow privileges to move toward larger operations which are the most efficient.

(2) Disadvantages

Eliminates concept that private land and public land should be used to compliment each other in providing a year round operation. Removing the upper limit restriction tends to deemphasize non-economic objectives of land management.

Alternative No. 6

A. That the Federal Government Give Domestic Livestock Priority Over Wildlife for the Public Forage

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Present statutes and regulations do not provide standards for allocating forage resources between domestic livestock and wildlife. As a result the forage permittee operates with some insecurity because of possibility of reallocation of his permitted forage resource to wildlife. This objective is to establish domestic livestock grazing as the first priority of the public range, thereby increasing the security of tenure for permittees.

(1) Advantages

The use of forage resources by wildlife has sharply increased over the years. Domestic livestock use on the National Forests, for example, has decreased from 20.4 million AUM's permitted in 1918 to 6.5 million in 1966, a decrease of 58 percent. Big game population estimates in National Forests in 1923 showed 1.17 million AUM's of use and this increased to 7.29 million AUM's in 1964, a 523 percent rise over 1923. Game use of the National Forests surpassed the use made by domestic animals in 1961. A total of 4.78 million acres has been withdrawn for wildlife on public lands.

These facts show that withdrawals of public land for wildlife does affect the permittee; the potential withdrawal contributes to insecurity of tenure. If domestic livestock is given priority of use of the range this factor of instability will be reduced.

(2) Disadvantages

The disadvantage to this system is in the deterimental effect on wildlife use which would result from reducing wildlife priority on the public range. Giving livestock priority for use of the lands will reduce the flexibility of management of the lands for changing needs of wildlife.

B. That Non Forage Users of the Public Range be Charged a Fee for Use of the Public Range, Which Fee Would be Collected by the Permittees as Agent for the Federal Government

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This alternative is designed to establish a fee charge for non forage users of the public range. Those who would be charged would include recreationists, hunters, fishermen, and others as Congress may define and to the extent that Congress may determine. The permittee would be given the responsibility as agent for the Federal Government to collect all charges.

(1) Advantages

The purpose and advantage of charging a fee to all users of the range land would be to require all users to pay a proportionate cost for the benefit received from enjoyment of the public land. This practice would be consonant with the emerging policy of the Federal Government that every identifiable recipient of a measurable unit or amount of government service or property from which he derives a special benefit be charged a reasonable fee.

One of the difficulties of implementing a charge against all non forage users of the public lands is administering the system. To properly administer the charge, a substantial expense would be imposed upon agencies with jurisdiction over public lands. Under this system the forage permittee would administer the charge, retain a specified portion of the charge for expenses and remit the remainder to the agency with jurisdiction over the public land. This will relieve the agency of additional time, energy and expenses and give the permittee an opportunity to exercise greater control and supervision of the permitted public land.

(2) Disadvantages

Establishing equivalent values for the respective users of the range would be exceedingly difficult. Obtaining uniform administration of the fee would be highly unlikely.

SECTION C

ALTERNATIVE SYSTEMS

Alternative No. 7

A. A Plan Outline for Determining Land Use

In the course of preparing Analytical Chapter IV for this report, it became apparent that the subjective approach for determining land use, such as that used by the U.S. Forest Service 1/ and the Bureau of Land Management in their multiple use programs, had about outlived its usefulness. Some call the doctrine advocated by these agencies the "equal priorities" doctrine. It is based on two separate canons: 2/

1. No one of the multiple uses has priority over another; all of the named resources and all of the named uses in the Multiple Use Act are of equal priority.
   (a) But, the relative values of the several resources and uses at a given location will vary from those at another;
   (b) Intangible and non-monetary values are just as important as economic values.
2. Multiple use is a harmonious combination of uses.
   (a) Maximum yield is not required for any individual use;
   (b) Maximum economic benefits from the combination is not required;
   (c) Not all uses need be available at any single location or at any single time; therefore, time periods must be long: at least a year or longer;
   (d) Haphazard occurrence of more than one use is not multiple use. Multiple use requires coordination and central direction;

1/ See Chapter IV, Section E, Conflicts between Livestock Grazing and Timber on Public Land, p. IV-124.

2/ The Concept of Multiple Use of Forest and Associated Lands--Its Values and Limitations, Address by Richard E. McArdle, 5th World Forestry Congress, August 29, 1960; and George R. Hall, The Myth and Reality of Multiple Use Forestry, 3 Natural Resources Journal, 276 (1963).

(e) The administrative unit of land for application of multiple use must be large.

Most of those who dispute the "equal priorities" doctrine are advocates, more or less, of the "dominant use" doctrine. These people reject both canons of the equal priorities group. It is their theory that land should be used to the maximum. This of necessity, requires that all land use be divided between primary and secondary uses. Primary uses involve the essential needs of food, shelter and clothing. Secondary uses concern all the other needs. Priority of use between primary and secondary uses is first established. Then, inasmuch as benefits from different uses are not necessarily additive, secondary uses will be allowed only to the extent that they do not interfere with the primary use.

There is some overlap in the two doctrines. However, there are several fundamental differences between the two. Where the equal priorities school sees good in variety, per se, the dominant use people assert that some product mixes should be avoided because they affect either the quantity or the quality. The most important point is that management judgments will differ appreciably depending on which doctrine is followed. Therefore, the choice of one doctrine over the other will lead to different goals.

Hall 3/ points out that neither of the two doctrines above are satisfactory. The equal priority advocates ignore that different decisions will affect not only how much different consumers get but also the characteristics of the outputs they receive. The equal priority doctrine also fails to provide a criterion for resolving the conflicts among uses except for the general standard of the best interest of the public. And the land agencies almost wholly define this standard.

The dominant use school ignores three important points in devoting land to its so-called primary use and then allowing only those secondary uses that do not conflict with this use:

1. As argued by the equal priority school, it may be socially beneficial to permit either a decline in the quantity or quality of one product if the quantity or quality of another is increased sufficiently.

3/ George R. Hall, the Myth and Reality of Multiple Use Forestry, 3 Natural Resources Journal, 276 (1963).

2. It may be possible, though more costly, to permit "minor" uses without damaging the quantity or quality of the "major use."

3. The dominant use position is based on a fallacy because social priorities cannot be established on the basicness of some products, nor can one assert as a social goal the maximizations of per unit output of land or the maximizations of the quality of some product. There is little purpose in producing goods that people do not want, even if they are more basic. Nor should the goal be just production for the sake of production alone; to accept this would be arguing that the purpose of the public is to work for the good of the land resource.

With neither doctrine acceptable in these times, it appears that a new approach to this most important problem is in order. A review of the literature reveals a great many complaints about the present system, 4/ but does not offer many specific solutions. From time to time even the land managing agencies comment on the difficult problem. For instance, in their March 29, 1968 report to the Public Land Law Review Commission, entitled "Public Land Management, Identification of Problems -- Analysis of Causes," Assistant Secretary of the Interior Anderson said:

> "In approaching the contents of this report, effort was made to relate them to the over-all objective as it has been identified for the Commission's purposes. That objective, under the Congressional declaration of policy of September 19, 1964, is to provide the maximum benefit for the general public. This objective, although clearly established as the central criterion, is not easy to apply in an exercise of problem identification and analysis. The broad public interest is often a nebulous concept. There are innumerable shades and gradations between public and private interests. What may be a benefit to one individual or group to another may be a detriment.
>
> "As Chairman Aspinall stated on January 11, 1968, there are few if any, in the administrative branches as well as in the Congress, who can approach these forbidding problems with any great degree of confidence that they have adequate knowledge."

4/ George R. Hall, Ibid.; George R. Hall, Strategy and Organization in Public Land Policy, Natural Resources Journal, Vol. 7, April 1967; Representative Wayne N. Aspinall in several talks and papers including remarks at meeting of the Bureau of Land Management National Advisory Board Council for Public Lands, at Las Vegas, Nev., Nov. 15, 1962, when he said "Many proposals have been made concerning the manner in which large tracts of land are to be claimed for particular use but none has met universal approval."

In his comments on multiple use management Mr. Anderson said:

> " ... The objective is to find the combination of uses, with each management unit and on the whole, that will yield the greatest public benefit.
>
> "Multiple use management is a means to an end--not an end in itself.
>
> "The essential administrative problem is to measure the benefits and costs of alternative land use arrangements, trying to find one that is better than others. This necessarily involves a judgment-type decision-making process. There are no known ultimately applicable criteria which can be directly applied to such decisions and there probably never will be."

Two of the last suggestions for a means to develop criteria which can be applied directly to such decisions were made in December, 1962 and May, 1963. In February, 1961, President Kennedy informed Congress that he had asked the National Academy of Sciences - National Research Council (NAS-NRC) to prepare a report on:

> "The present state of research underlying the conservation, development, and use of natural resources ... and giving particular attention to needs for basic research and to projects that will provide a better basis for natural resources planning and policy formulation."

Pending the recommendations of the Academy-Research Council, he also directed his Science Advisor and the Federal Council for Science and Technology to review ongoing federal research activities in the field of natural resources and "to determine ways to strengthen the total government research effort relating to natural resources." 6/

The Academy-Research Council had made several less extensive efforts to the same end. In their report at this time they urged interdisciplinary studies as a basis for policy determination. The Federal Council's report urged policy determination by an interagency committee. 7/

5/ 107 Cong. Rec. 2584 (1961) as reported by Ordway, Bowman, and Milton, "Research on Natural Resources: A Review and Commentary." Natural Resources Journal, Vol. 4, May, 1964.

6/ Ibid.

7/ Ibid.

The report of the NAS-NRC consisted of six coordinate studies. The Study Team on the Renewable Resource Report was headed by Paul Weiss. 8/ The last proposition in this report states that optimization of:

> " ... natural resources for human benefit requires a permanent, continuous, and systematic--not fragmentary or isolated--process of investigation, recording, and evaluating in reference to the total perspective. An independent organization for this task seems mandatory.
>
> "The ensuing prescription for such an organization is visionary in the better sense of the word. An intelligence agency is proposed: (1) to keep us informed of all physical, biological, sociological, geographic, and economic events and developments of potential bearing on man's optimal adjustment to his environment, and (2) to attempt to 'evaluate in scientific terms the probable net effect of their mutual interactions on man's future --short-range and long-range--in national, regional, and global respects.' The full prescription should be read carefully in detail. A warning against endowing the agency with powers of decision, or enforcement, so that it may steer clear of the political arena, is noteworthy." 9/

The Federal Council for Science and Technology's thrust was primarily economic and technological; the Academy-Research Council's approach was primarily ecological. While the NAS-NRC suggested that a permanent intelligence agency be established, the Federal Council suggested an interagency committee. The summary report of the NAS-NRC modified Mr. Weiss' report on Renewable Resources until, in substance, it is only another "interagency research integrating committee." 10/

Although no reasonable solution has yet been offered which can be applied successfully and directly to the decision-making process referred to earlier by Assistant Secretary Anderson, it does appear that the means may be at hand to develop such a process. The words necessary to describe this process cannot very well be assembled in the manner that the earlier alternatives were developed. However, it is believed that the ideas presented are worthy of consideration so this plan outline will be developed in a conventional manner.

8/ Weiss, Renewable Resources, A Report to the Committee on Natural Resources of the NAS-NRC (NAS-NRC Publication No. 1000-A, 1962).

9/ 107 Cong. Rec. 2584 (1961) as reported by Ordway, Bowman, and Milton, "Research on Natural Resources: A Review and Commentary." Natural Resources Journal Vol. 4, May, 1964.

10/ Ibid.

Plan Outline

In recent years a few new techniques, based on old principles for the most part, have been proven by many applications which permit the solution, or at least approximate solution, of problems which have seemed beyond the comprehension of man just a few years ago. These include using the economic efficiency model in the most sophisticated manner possible; it involves the more advanced research work in statistical methods; it includes all the techniques of operation research and linear programming. All these procedures are possible today because of the application of computers. Before computers, the level of sophistication was only a small fraction of what it can be today. The judgment methods utilized by the land agencies were undoubtedly as good as any up to about 20 years ago. Since that time, the subjective methods for determing land use have been getting more and more obsolete. However, the complete replacement of the methods used by the agencies will probably require that the analytical techniques mentioned above fit into a system that permits only the very best in judgments to be used for each step in the complicated process. It appears that the minimum structure required for this system would have to have some resemblance to the description below.

In describing this structure, the opposite end from that usually chosen will be used as the beginning. This is the top; the final point of judgment: the Congress. Both Congress and the Executive fully appreciate that:

1. It is the responsibility of Congress to make rules for the use and disposition of federal property.

2. It is the function of the executive branch to administer publicly owned resources within the framework of standards established by Congress. 11/

However, it is recognized that there has been a good deal of difficulty in connection with the management of public lands because of the need for legislative guidelines adapted to the expansion of the American economy in the 1960's. 12/ Without adequate guidelines, management, as it is currently exercised by the Bureau of Land Management and the Forest Service, is unsatisfactory. 13/

11/ See correspondence between Chairman Aspinall to President Kennedy dated October 15, 1962, and reply dated January 17, 1963 as included in print of House Committee on Interior and Insular Affairs dated Sept. 24, 1964.

12/ Rep. Wayne N. Aspinall. Remarks at meeting of the Bureau of Land Management National Advisory Board Council for the Bureau of Lands at Las Vegas, Nev., November 15, 1962. p. 18.

13/ *Ibid.* - p. 58.

One probably cannot quarrel too much with the action of the Executive, because when a gap exists in public administration it must be filled. 14/ Still, a situation exists where there is little relationship between the management and administration of the public lands and the policies enunciated by Congress in enacting the great body of public land laws. Therefore, there was need for concern because of the failure of Congress to respond to what lawyers might call ultra vires acts by the Executive -- beyond its legal authority. 15/

The concern of Congress mentioned above was at least alleviated through the enactment of legislation which created the Public Land Law Review Commission. However, this concern over a period of a considerable number of years pointed up an inherent weakness in the relationship between Congress and the Executive in the establishment of objectives for and management of the public lands. Today the public lands are a tremendous resource that occupy around half of the western regions. This is a very large area. Nevertheless, the public land is no longer in such great supply that conflicts in land use -- in public needs -- can be solved merely by one of those in conflict moving on to another piece of land. While many of these potential conflicts, in most areas, are little more than noticeable, only a few years ago almost no one was even aware of them. Therefore, it seems that wisdom would dictate that steps should be taken now to assure that all conflicts will be minimized in the future; and that the hard choices made, when necessary, were made only after carefully weighing several alternatives in a factual and objective manner always keeping the several goals of the local area, region and nation in mind.

As stated above, it is the responsibility of the Congress to make the rules for the use and disposition of federal property. Thus, Congress is the ultimate judgment. It is the responsibility of the executive branch to manage the public lands in accordance with the standards established by Congress. The problems discussed above came about because Congress has had to go back to the administrative agencies, for the most part, for the advice necessary to establish its standards. This has put both Congress and the executive branch in an untenable position. Congress does have access to the advice of industry and the public through the device of public hearings. Also, congressional committees have a certain amount of investigative ability available through their professional staffs. All members of Congress also have direct access to their constituencies for some of the best personal advice available. However, land use choices are becoming so

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14/ *Ibid.* - p. 81.

15/ *Ibid.* - p. 40.

complicated that Congress needs a good deal more than this. It appears that nothing less will satisfy the advisory needs of Congress in this area than an independent body; directly responsible to Congress; fully staffed in all necessary disciplines; skillful in the use of the sophisticated, analytical techniques; with ready access to all technical, legal, economical, and social information available; and having a strong research arm that is competent in the several disciplines relating to land, the land based resources, and man's optimal adjustment to his environment.

This independent body needs to be something more than the intelligence agency visualized by Paul Weiss and his study team which performed the Renewable Resources Study for the NAS-NRC Committee on Natural Resources referred to earlier. The work function does need to be a permanent, continuous, and systematic process of investigation, recording and evaluation as projected by Weiss. The following are also important and necessary functions of this independent body:

1. A full, interdisciplinary research arm should be established as part of the body. This research group should span all the technical, economic, legal, and social disciplines involved in land and the land based resources.

2. Man's relationship to the land and its resources needs to be evaluated within the context of man's optimal adjustment to his total environment.

3. The independent body needs to inventory not only all the land and its resources, but it also must know with some accuracy the public demand for these resources, including their divergent uses.

4. This need for knowledge of the various demands will probably require the expansion and refinement of one technique and the basic development of another. These techniques are:

   (a) The technique to be expanded and refined is that of social simulation. Computer simulation has been adapted to the many variables which interact in a real social situation--social and physical, continuous and discontinuous. To a considerable degree this technique can take into account the moods of voters, the desires of urban and rural dwellers, competitive drive, irrational prejudices, and the like. This technique, when combined with the improving skills of research pollsters, provides a practical means for determining the resource use demands of the public.

   (b) The new technique that needs to be developed is that of determining equivalent values for the amenity resources--those having esthetic values. It has been said that all resources are defined by human perception. Lucas and others have pointed out that:

   > "Despite the complete subjectivity of wilderness and the variation in its perception, neither the social scientist nor the land manager need throw up his hands in bewilderment. Empirical research in one wilderness-type area, the Boundary Waters Canoe Area, suggests that considerable order can be imposed even upon subjects as elusive as solitude and beauty." 16/

   Again, by utilizing some of the techniques of social simulation combined with polling skills, and then stressing against empirical research in the amenity resource fields, one can begin to establish some practical values for the resource "intangibles." By following steps of this nature, effective techniques for programmatic research can be developed which in turn will permit the application of useful standards for program evaluation and appraisal.

   In developing such a program it should be noted that it would not necessarily be required to establish the amenity values in terms of dollars. The only thing that is required is to be able to identify relative values together with the motives and motivations of those supporting these values. The amenity value could be an equivalent unit called a Charley. This Charley would then be placed in a simulated model and analyzed with other Charleys for optimizing, minimizing, or maximizing as the program may require. Under certain circumstances it may be desirable to establish comparatives in terms of pluses and minuses. In such cases, the final simulation may involve both Charleys and Charlottes.

   In any event, a combination of these techniques offers more than a promise. Wengert has said that,

   > "The premises ... (of the research challenge) ... are that operationally useful standards for

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16/ Robert C. Lucas, "Wilderness Perception and Use: The Example of the Boundary Waters Canoe Area." Natural Resources Journal, Vol. 3, January, 1964.

> program evaluation, for setting priorities, for choosing desirable rather than less desirable courses of action theoretically can be developed. At the same time, it has been suggested that, to date, only a start in developing a methodology for evaluating resource programs has been made, and this largely with respect to resource economics. This is the challenge to those interested in research in this field." 17/

Wengert also quotes Herbert Simon:

> "The function of knowledge in the decision-making process is to determine which consequences follow upon which of the alternative strategies ... 18/

Simon also emphasized,

> "The fact that consequences usually form 'isolated' systems provides both scientist and practitioner with a powerful aid to rationality, for the scientist can isolate these closed systems in his experimental laboratory, and study their behavior, while the practitioner may use the laws discovered by the scientist to vary certain environmental conditions without significantly disturbing the remainder of the situation." 19/

5. The independent body needs to have some clear insights into the comparative values insofar as the local, regional, and national interests are not equal.

6. The need for an entirely new form of land classification is probably in order. In addition to those systems briefly described in Chapter III of this study, the classifications should probably be expanded so that they can be evaluated as to their capacity for economic development; i.e. whether or not they are economically reversible and thus can be exploited beyond sustained yield. When analyzed from the standpoint of being a completely flexible resource, several applicable classifications for the land will become apparent.

7. The body must be composed so that it engenders respect from the many different groups of land users having conflicting attitudes regarding how the land and its associated resources should be used.

17/ Norman Wengert, Resource Development and the Public Interest: A Challenge for Research, Natural Resources Journal, Vol. 1, Nov. 1961.

18/ Herbert Simon, Administrative Behavior 62 (1949).

19/ *Ibid.*

8. The body must be objective and rational in nature. It must analyze with its head and not with its emotions. The one great weakness of some planning is that the planner-analyst does not establish needs based on what the public wants, but instead on what the analyst thinks the public ought to want.

9. The independent body must be in a position to weigh all facts in an atmosphere of continuous (though perhaps small) change.

10. The body must have built into it a system of checks and balances so that, even though it is sensitive to change, it does not act in an untimely or parochial manner.

Needless to say, this body should be advisory only. It should be a creature of the Congress, and its continuous supply of information should be to the Congress. However, this information should be public in all respects. Information should be prepared in such a manner that it would invite complete criticism if such should be necessary.

Undoubtedly a body of this nature might be developed in any one of several ways. One rather obvious way comes to mind quickly. That is for the Congress to establish a small, permanent Public Land Law Review Commission. This Commission would then act as liaison between Congress and a Land Grant Council. The Land Grant Council would be a representative body consisting of the directors of the Land Resources Research Councils connected with appropriate land grant colleges, largely oriented to the West. These directors would be in charge of Land Resources Research Councils to be established at these land grant colleges. These Land Resources Research Councils would be permanently staffed, multi-disciplined groups established on the several campuses and under the administration of the university. They would have the full interdisciplinary talents of the universities to fall back on as necessary. The financing of each Land Resources Research Council would be in accordance with some formula, with both the Federal Government and the state participating. One formula might be that funds were divided in accordance with the proportion of federally-owned and state-owned lands.

The duties of each Land Resources Research Council would be to provide all efforts necessary to determine policy for use of both federally and state owned land in each state. Their power would be to recommend to Congress and to the individual state legislatures only.

The duties of the Land Grant Council would be to meet at regular intervals in order to mutually review the separate state proposals for federal land use, and to prepare a combined recommendation to Congress concerning this land use.

Such an organization, structured in this manner, would have the following advantages:

1. It would be operating within an intellectual atmosphere rather than in a political environment.

2. It would be part of an existing organization, much of which would already be skilled in agricultural, forestry, engineering, mining, and legal research through the universities' various colleges.

3. It would be part of an organization generally respected by all throughout each state.

4. It would be in the most favorable position to know the local and regional needs for each state. At the same time, it would be composed of professional scholars and research men who could maintain objectivity regarding the local and regional relationships with the national needs.

5. The Land Grant Council would be an overall review body which would (1) provide the additional wisdom which comes from the larger and broader group, and (2) provide additional assurance that recommendations would not be provincial in nature.

6. The Land Grant Council would provide Congress with the wisdom necessary for it to carry out its constitutional responsibilities with respect to federal land. In addition, the separate Land Resources Research Councils would provide the same service for the individual states. An associated advantage to this arrangement is that it would provide the best possible conditions for coordinated programs between the State and Federal Government wherever this appears to be advantageous. Through the Land Grant Council, each state would also have the advantage of having its own resources reviewed by the talented staffs of several other states.

The establishment of the Land Grant Council and the several Land Resources Research Councils should not be a large addition to the federal land combined budget as a substantial number of these people would replace payroll on the staffs of the U.S. Forest Service and the Bureau of Land Management. This replacement would be for people who formerly performed their services for the agencies. It would not be necessary to replace the agency people. If Congress desired, it would merely mean not replacing a number of vacancies within the agencies.

The same would also apply to the several states. A good percentage of those who represented the state's share of the amount budgeted for this would probably be equivalent men who had been in the state's land or resources department.

The system set forth is designed as an action program for solving complex choices inherent in multiple use land management today. Its mission will have been achieved in part if it sparks attention to the subject of solutions as opposed to the delineation of problems.

B. Typical Development Policy System

The following is a general description of how a Development Policy System might work sometime after the Land Grant Council and the several Land Resource Research Councils have been in operation. This is a hypothetical situation set for, say, 1985. The following conditions prevail:

1. The land concerned is a portion of the Curlew National Grasslands in Southern Idaho.

2. The current census of agricultural needs has been conducted by the Bureau of the Census in cooperation with the Department of Agriculture, the Department of the Interior and the Land Grant Council. Based on information developed by these groups, the Land Grant Council had proposed a flexible agricultural program to the Congress which had included a certain readjustment of agricultural lands. Among this land readjustment, was the recommendation that certain federal lands, which had been held in reserve, be brought back into agriculture for the purpose of grazing livestock. It was further recommended that the type of land be "Type 2-C Grazing Land", which is grazing land in good condition and economically reversible.

The "flexible" program anticipates that this land would probably serve this purpose for a period of 30 years or more. However, there is a good chance that, after the National Agricultural Program is more refined and based on more complete information than is available at that time, that part of this land may be redefined to a higher use. Therefore, a 20 year lease contract has been negotiated with one (or two, or more) of the local grazing districts. Certain overall "rules", based on good agricultural practice, were a part of the lease contract terms to protect the Government against allowing their land to deteriorate. At the same time, a management plan for the next ten years was specifically developed, with a tentative plan for the last ten. The plan was to be reviewed briefly every year, with a rigorous review of both the plan and certain of the contract terms every five years. The overall length of the contract was to be reviewed at this same five year interval. If conditions were favorable, then the contract would be extended for another five years. There may or may not have been some modifications to other term details. In any event, a clear understanding of the agricultural and business terms of the contract between the Government and the grazing district was maintained at all times.

3. The Government's rental rate was based on the land value of $600 per animal units. The monthly rate would be $2.50 per AUM, the sum needed to yield a 5 percent return on the land value.

Hypothesizing from the generalities above, one can see how a flexible, yet clear cut, business relationship can be developed between the Government and, in this example, a grazing district. In this case, it is anticipated that the grazing district will manipulate the Government land, within certain overall rules similar to those established by any prudent landlord, to achieve marginal (or, perhaps, equimarginal) returns. Part of the rules would be that the lessee would leave the land in a certain prescribed condition whenever the lease expired. During the life of the lease, the lessee would have a great deal of flexibility in which to manage the land for the Government.

This example does not discuss any social objectives that may be part of the overall National Agricultural Program. However, in certain parts of the country, for example, the plan and program may include certain elements which are designed to carry out specified activities which are part of an overall "rural poverty" program.

As time permitted more complete information to be developed through both investigative and research activities, and experimental work conducted at the same time proved and/or refined the growing store of land resource knowledge, only the lack of intelligently applied imagination would prevent the solution of many of the land resource problems not faced by the nation.

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